

The Mining Journal

RAILWAY AND COMMERCIAL GAZETTE.

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

No. 327. --Vol. XI.]

LONDON: SATURDAY, NOVEMBER 27, 1841.

[PRICE 6D.]

STANNARIES OF CORNWALL.

IN THE VICE-WARDEN'S COURT.

PURSUANT to two several decrees of the Vice-Warden's Court, made in the causes of "Fox and others v. Williams," and "Same v. Same," the creditors in respect of WHEAL HENRY MINE, in the parish of Wendron, within the said Stannaries, are forthwith to come in and prove their debts before the registrar of the said court, at his office, in Truro, or in default thereof they will be excluded the said several decrees. PAUL and ROBERTS, Plaintiffs' Solicitors, Truro. Dated November 17.

MINES AND MATERIALS IN IRELAND FOR SALE.

TO BE SOLD, BY AUCTION, by the board of directors of the MINING COMPANY OF IRELAND, on Tuesday, 7th December, at Derrynoo Lead Mines, near Keady, county Armagh, a steam pumping-engine, cylinder 30 in. diameter, stroke 8 feet, cylindrical boiler, with tube, weight 9 tons, capstan, connecting-rods, and all the fixtures of the mine extending over sixteen townlands, held at a nominal rent of £45 3s. 1d. per annum, under his Grace the Lord Primate—a most liberal landlord.—Also, the lease and goodwill of the mines within twenty-eight townlands of the estate of Trinity College, adjoining the above, upon which the company has expended a considerable sum in opening ground and erecting machinery.

For further particulars apply to the resident agent, Mr. William Petherick, or to the undersigned. By order, RICHARD PURDY, Secretary. Dublin, Nov. 4.

HOUSEHILL COAL AND IRON-WORKS FOR SALE.

TO BE SOLD, BY PUBLIC ROUP, within the Saracen's Head Inn, Paisley, upon Thursday, the 16th day of December, at One o'clock in the afternoon, the whole HOUSES and IRON-WORKS at Nithhill, together with the right and benefit of a lease of the MINERALS in Househill Estate, and the machinery and utensils connected with the different works, consisting of two furnaces, blowing engine of 70-horse power, capable of working three furnaces, heater, pipes, ovens, two pumping and winding-engines, of 20 and 12-horse power, with pumps and winding machinery, &c., &c., together with the workers' houses, offices, smith and wright's shops. The ground on which the iron works and houses are erected is held free, and extends to seven acres and thereby. The lease of the minerals is for twenty-one years, commencing when the main seam of coal should be reached in the new pit, and includes nearly all the minerals in Househill estate, which extends to 310 acres; these minerals are ironstone, alum ore, copperas ore, fire clay, limestone, and coal. The seams of alum and copperas ore lie above the main seam of coal, and so can be worked along with it at low rates. The main seam of coal, which is called the Hurlet coal, has been reached by a bore, and found to be 15 feet thick, is well known in the district as being a peculiarly rich engine coal, and the one from which nearly all the steam-engines for five miles round are supplied. Besides the main coal, there are several smaller seams, from seventeen to thirty-six inches in thickness, of an excellent quality for domestic purposes, and also for the smelting of iron. The coal-field has been examined by two eminent engineers, who report most favourably of it. The lordships upon the different minerals are as follows:—

On riddled coal 6d. per ton.
" Dross 14d. per ton.
" Unriddled coal, average—say from 4d. to 4½d. per ton.
" Alum and copperas ore 10d. per ton.
" Calined ironstone 1d. per 2½ cwt.
" Limestone 1s. per chaldron.
" Fire clay 4d. per ton.

The expense of working unriddled coal in Victoria pit, from the main or Hurlet seam, will not exceed, including lordship, 2s. 8d. per ton. For the last five years the selling price of this coal has averaged 6s. 13d. per ton at the pit mouth. The whole works were recently erected, and the machinery and utensils are nearly new, and all in excellent working order and condition.

For further particulars apply to William Hodge, writer, 5, Moss street, Paisley, who is in the possession of the title deeds, articles of sale, engineers' report, and inventory of the machinery and utensils. Paisley, Nov. 10.

TO ENGINEERS, MACHINE MAKERS, OR CAPITALISTS.

TO BE SOLD, BY PRIVATE CONTRACT, A FOUNDRY, FORGE, ENGINE, AND BOILER MANUFACTORY, situated in a mining district of great importance. This concern is now in full operation, and will be sold with immediate possession, if desired. The purchaser will obtain the goodwill, and a steady demand, at a fair price for certain work required by the present owners. The premises, machinery, and the tools, are nearly new, and in perfect order. The power required is given by a considerable stream of water, which, together with the land, buildings, offices, and a dwelling-house, are held at a very moderate rent, upon a lease of which thirty-eight years are still unexpired. Coal and iron abound in the immediate neighbourhood, and the costs of both, as well as of manual labour, are low. The whole concern will be disposed of upon very moderate terms, and is well deserving of the attention of engineers or capitalists disposed to embark in a compact and well-established business of this kind.

Further particulars may be obtained upon application to Mr. John Taylor, 2, Duke-street, Adelphi, London; or to Mr. John Taylor, jun., Coed dw, Mold, Flintshire.—November 4.

MINE SHARES FOR SALE.

TO BE SOLD, TWO THOUSAND SHARES IN ROSEWALL HILL MINE, in the county of Cornwall; the lodes of St. Ives Consols Mine, which are well known to have been very productive, and are still paying the adventurers large profits, run through Rosewall Hill Mine; Wheal Reeth Mine, which has been equally productive with St. Ives Consols, is also in the immediate vicinity. The Rosewall Hill Mine, on which ample machinery, the most approved principle, has been recently erected, is sunk to a sixty fathom level below the deep adit, and is now in full course of working, with every prospect of success.

For particulars, apply to Mr. William Bawden, 2, Bank-chambers, London.

SLATE QUARRY FOR SALE.

TO BE SOLD, A moderate-sized SLATE QUARRY, situated in the county of Merioneth, North Wales; there are workmen's cottages, machinery, and the necessary buildings for carrying on the same. The quality of slate is excellent for slabs and other purposes. A considerable sum has been expended. The above can be offered on terms very advantageous to a capitalist disposed to engage in such a concern.—For full particulars apply to Messrs. Aston and Wallis, solicitors, 2, New Broad-street, London.

COPPER MINES FOR SALE.

TO BE SOLD, TWO MINES, situated in the county of Merioneth, North Wales, very conveniently situated for the shipment of ores, of which a considerable quantity has already been raised and sold at Swansea. The right of raising ores extends over a very great extent of country; a considerable sum has been laid out, and the property and machinery are now offered on most advantageous terms. For particulars apply to Messrs. Aston and Wallis, solicitors, 2, New Broad-street, London.

FORGE AND MILL AT LIVERPOOL.

TO BE SOLD OR LET, those spacious and eligible PREMISES situated in Oxford-street, Vauxhall-road, called the VAUXHALL FORGE. The machinery is completely fitted, and with working tools ready for use. The works comprise shingling and drawing-out rollers, puddling, balling-mill furnaces, and a chaffy, a 14 and 8 inch train of hammers and a guide train, three pair of shears, two cranes, and whatever is required to manufacture uses, and bars. The whole is driven by an engine of 40-horse power, to which two boilers are attached. There are excellent office rooms, scrap house, smiths' and joiners' shops, lodge, weighing machine, &c., &c., forming altogether a complete establishment. There is always an abundance of good scrap to be had on the spot at a reasonable rate. Liverpool is allowed by competent judges to be one of the best situations in the kingdom for manufacturing superior descriptions of iron.—Apply to the owner, John Waring, Lydia Ann-street, Liverpool.

BLAENDARE COLLIERY, near Pontypool.

TO BE LET, and entered upon at Christmas next, all that well-known COLLIERY, called the BLAENDARE COLLIERY, with the several VEINS of COALS and IRONSTONE now in work, and which will be let upon a reasonable lease, and for a term of years, together with the tram waggon and canal boats.—Likewise, a BRICK MANUFACTORY complete, with WATER-WHEEL for grinding clay, and drying stoves, &c. The clay is got within sixty yards of the manufactory, and is of the very best quality. The tenant may have the option of renting the Blaendare farm, consisting of 80 to 100 acres of rich meadow and pasture land, together with an excellent cottage residence upon it, and good outbuildings adjoining thereto. The workmen's cottages to be taken at a yearly rent. There is a meadow called the "Boat-house Meadow," adjoining the Blaendare Colliery, in which there is a dry dock for building and repairing canal boats, and a good office and two cottages on the same, which will also be let with the colliery. A respectable tenant will meet with every encouragement.

For further particulars apply, either personally, or by letter, to Mr. John Maund, Blaendare Cottage, Pontypool.—November 19.

TO ENGINEERS, PATENTEES, CONTRACTORS, AND BUILDERS.

STEAM-ENGINES ON SALE OR HIRE.—C. H. CAPPER, Iron Founder, Manufacturer of Steam engines, Sugar-mills, and Mill Machinery, Broad-street Foundry, Birmingham, has ENGINES from 6 to 20-horse power always on hand, and any parties wishing to hire new or second-hand ones for a given time, to try experiments, &c., may have the same at work immediately, and upon the most moderate terms.—For particulars apply as above.

WANTED—The late cashier of the Blaenavon Iron and Coal Company being disengaged from his appointment, in consequence of a change in the management, is desirous of obtaining another, either as CASHIER, SECRETARY, or AGENT. He has had great experience in the iron trade, as well as in mercantile affairs generally, and can produce first-rate testimonials of integrity and ability, and security if required.—A line addressed "S. K. B.," Post-office, Abergeenny, will be immediately attended to.

MINING CLERK.

WANTED, a CLERK to keep the accounts of copper and lead mines; he must have certificates of his capability and character, have a thorough knowledge to set pitches and make bargains, and understand mining generally; salary, £100 per annum.—Apply by letter, post paid, to "X. X.," post-office, No. 115, Regent-street, London.

POLBREEN TIN AND COPPER MINING COMPANY.—Notice is hereby given, that a SPECIAL GENERAL MEETING of shareholders will be held on Tuesday, December 14, at 44, Finsbury-square, at Two o'clock precisely, at which the report of the committee appointed at the Special General Meeting held on the 3d day of August last will be submitted.—London, Nov. 22.

TINCROFT MINING COMPANY.—Notice is hereby given, that the ANNUAL GENERAL MEETING of shareholders will be held on Thursday, the 2d of December, at 44, Finsbury-square, at Two o'clock precisely. London, Nov. 22.

LONDON AND BIRMINGHAM RAILWAY.—CALL OF

TEN POUNDS (being the second) on the £25 shares, making £15 per share called for.—The directors of the London and Birmingham Railway Company having resolved that a SECOND INSTALLMENT of TEN POUNDS per share, payable on or before the 10th of January, 1842, should be called for on the £25 shares of this company, the proprietors of such shares are hereby required to pay, on or before the appointed day, to any one of the undermentioned bankers, the sum of £10 on each of their respective shares, viz.:—London—Messrs. Glyn and Co., 67, Lombard-street, or at the office of the railway company, Euston Station. Birmingham—Messrs. J. L. Mollet and Son, or the Birmingham Banking Co. Liverpool—The Bank of Liverpool. Manchester—Messrs. B. Heywood and Co., or the Bank of Manchester.

The bankers have been severally instructed to charge interest, at the rate of 5 per cent. per annum (according to the provisions of the Act of Incorporation), on all sums which shall be tendered after the 10th of January, 1842. GEORGE CARR GLYN, Chairman, of the Board of J. F. LEDSAM, Deputy-Chairman, of the Board of Directors. Office, Euston Station, Nov. 12. By order, R. CREED, Sec.

STEAM-CARRIAGE AND WAGGON COMPANY.—The di-

rectors beg to announce, that, in pursuance of a resolution passed at a General Meeting of shareholders, held at the Freemasons' Tavern, on the 11th November, they are ready to receive PROPOSALS from persons willing to supply STEAM-CARRIAGES for the conveyance of goods or passengers on turnpike-roads. Parties proposing to supply carriages must produce one in a state fit for work, to be submitted to such test as the directors may require, and if approved, arrangements for the construction of several for the use of the company will be immediately made. All communications should be addressed as under. Offices, 18, Moorgate-street, City. By order of the board.

PARISIAN BITUMEN COMPANY, Millwall, Poplar.—The

directors of the abovesaid company beg to call the attention of engineers, architects, surveyors, builders, and the public generally, to the applicability of the BITUMEN manufactured by them, as a pavement or flooring; also for its use in covering arches for the prevention of drains and preservation of the masonry. They beg also to state that it has been used very successfully as a cement for masonry on the weirs of the Upper Medway, and is particularly applicable to hydraulic works and foundations of heavy buildings. They beg to submit the following list of prices, and to state that they will guarantee the durability and efficiency of any work executed by them:—Covering viaducts or arches of bridges, vaults, terraces, &c., 1½ inch thick, s. d. per square yard 4 6 Paving pathways, kitchens, cellars, granaries, malt houses, warehouses, &c., 1½ inch thick 4 6 Paving barns, court yards, tun rooms, wharfs, stables, &c., 2 inches thick 3 6 Paving walks, &c., 1 inch thick 3 6 The above charges are exclusive of the cost of carriage, which must be borne by the parties by whom the work is required. W. MACKENZIE, Superintendent.

ANDREW SMITH'S PATENT WIRE ROPES, for standing

rigging, lighting conductors, stopping of blocks, mining, railway, and general purposes; about half the size and weight of hempen ropes, and 25 per cent. cheaper. Testimonials to that effect, with specimens, may be seen, and every information obtained, at the office, 37, New Broad-street, city, manufactory, Mill-wall, Poplar; and also of the following agents:—Robertson and Co., 12, Goree Place, Liverpool. Matthias Dunn Newcastle-on-Tyne. Joseph Bothway Plymouth. John Thompson and Co. Wigan. J. T. Regellas Truro. Thomas Mooney and Son Dublin. Ferrin and Nolan Wicklow. Costes and Young Belfast. James Kibbie and Co. Glasgow. James Gunn Leith. J. M. Beatts, Clements's-lane, High-street, Dundee.

ANDREW SMITH'S PATENT WIRE ROPE. This rope has been in use for standing rigging in her Majesty's Navy, and in a great number of merchant vessels, for upwards of six years, and is giving the highest satisfaction; the rope is also employed in various mines and railways in different parts of the kingdom.

THE PATENT SAFETY FUSE, FOR BLASTING ROCKS IN MINES, QUARRIES, AND FOR SUBMARINE

OPERATIONS.—This article affords the safest, cheapest, and most expeditious mode of effecting this very hazardous operation. From many testimonies to its usefulness with which the Manufacturers have been favoured from every part of the kingdom, they select the following letter, recently received from John Taylor, Esq., F.R.S., &c., &c.:—"I am very glad to hear that my recommendations have been of any service to you. They have been given from a thorough conviction of the great usefulness of the Safety Fuse; and I am quite willing that you should employ my name as evidence of this." Manufactured and sold by the Patentees, BICKFORD, SMITH, and DAVEY, Camborne, Cornwall.

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SOCIETY, Vol. I.—Price to members, 7s. 6d.; to the public, 10s. 6d. Contents:—1. Dr. Black, on the objects and uses of geological researches.—2. Mr. Binney, on the geology of Manchester and its vicinity.—3. Mr. Binney, on the Lancashire and Cheshire coal-field.—4. Mr. Binney, on the marine shells found in the Lancashire coal-field.—5. Mr. Bowman, on the origin of coal.—6. Mr. Bowman, on the fossil trees on the line of the Bolton Railway.—7. Mr. Bowman, on fossil microscopic parasitical corals.—8. Mr. Binney, on the fossil fishes of the Pendleton coal-field.—9. Mr. Fairbairn, on raising water from mines on the Cornish principle.—10. Mr. Bowman, on the upper Silurian rocks in the Vale of Llangollen.—11. Captain Brown, on fossil shells from the Vale of Tadmorden. Simpkin and Marshall, London; and Simms and Dinham, Manchester.

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THE THAMES TUNNEL is Open every day (except Sunday)

from Nine in the morning until Six in the evening, and is brilliantly lighted with gas. The present entrance is on the Surrey side of the river, close to Rotherhithe Church. The shield has now reached the shaft at Wapping, and the total length of the Tunnel is 1172 feet. Admission, One Shilling each. By order, J. CHALLIER, Clerk to the Company. Company's Office, Walbrook-buildings, Walbrook, Nov. 1841.

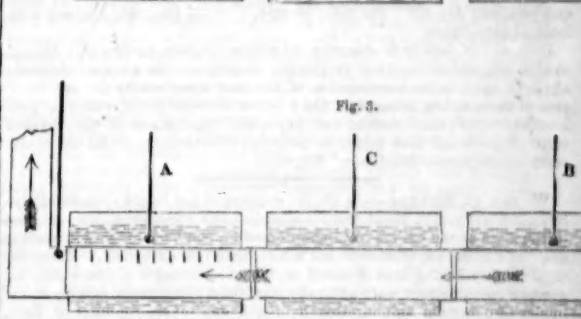
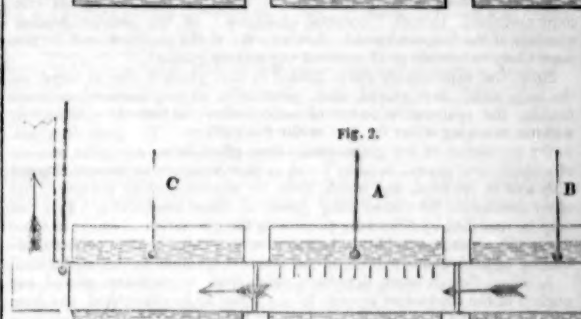
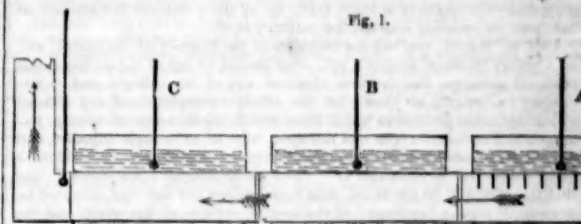
N.B.—Conveyances to Rotherhithe, by omnibus, from Piccadilly, Charing Cross, Fleet-street, and Gracechurch-street; and by steam boats, from Chelsea, Vauxhall, Lambeth, Hungerford, the Old Shades Pier, and London Bridge, to the Tunnel Pier at Wapping. Books, with plates descriptive of the works, are sold at the Tunnel, price One Shilling.

ON THE EVAPORATIVE POWERS OF BOILERS.

BY C. W. WILLIAMS, ESQ.

My object, in this paper, is to show—1. The practical error of considering the effective power of a boiler as the result of a given amount of flue surface. 2. That if such be erroneous as to boilers, it is still more so as to the evaporative power of different kinds of fuel. 3. That with the present construction of boilers, and their defective powers of transmitting heat, the weight of water evaporated cannot be taken as a test of efficiency, either of boiler or fuel. 4. That the weight of water evaporated by ordinary boilers may be increased without increasing the size, either of the flues or furnace; and that even an inferior fuel may be made to produce greater evaporative effect than is generally obtained from the best.

In my former paper I distinguished between the generation of heat in the furnace, and its application to evaporation in the flues. The accompanying diagrams will further illustrate the improved system of evaporation.



Figs. 1, 2, and 3, represent three experiments, each with a series of three distinct boilers, A, B, and C, so connected by their flues, that the heat, after passing through the first, is carried on through the second and third. Each of the three boilers was charged with 11 lbs. weight of water, the total in each experiment being 33 lbs. On inspection of the diagram, it will be seen that the only difference between the three experiments consists in the change in the situation of the boiler A, which was furnished with the conduction pins, while the other two, B and C, have plain surfaces in the ordinary way. In fig. 1, the conduction boiler A, occupies the first place, nearest the flame, and, consequently, receives the greatest heat. In fig. 2, it occupies the second place; and, in fig. 3, the third place. The quantity of gas consumed (and consequently the heating power), as well as the time employed, was the same in each experiment—namely, thirty cubic feet of gas in two hours and forty minutes. Thus, the quantities of fuel consumed, and heat generated, were the same in all. It will now be seen that the evaporative powers of the three boilers respectively, arising from their relative positions, were as follows:—

EXPERIMENT—FIG. 1.		
A, conduction boiler, evaporated	31 lbs. 23 oz.	
B, plain boiler	0 11 4	
C, plain boiler	0 7 4	
Total evaporated	4 5 4	

EXPERIMENT—FIG. 2.		
B, plain boiler, evaporated	11 lb. 23 oz.	
A, conduction boiler	2 2	
C, plain boiler	0 10 4	
Total evaporated	3 16	

EXPERIMENT—FIG. 3.		
B, plain boiler, evaporated	11 lb. 23 oz.	
C, plain boiler	0 11 4	
A, conduction boiler	1 14 4	
Total evaporated	3 13 4	

We here see that the conductor boiler A, wherever it is placed (as regards its distance from the flame), surpasses, in evaporative power, both the other two. But there is another instructive and highly important fact, elicited by these experiments—namely, that although the three boilers A, B, and C, taken together, present the same amount of heating surface and conducting power, yet the sum of their evaporative effects bears a palpable relation to the place in which the conducting boiler A stands.

Thus, the sum of the weights evaporated in the three experiments is as follows:—

Fig. 1, the total evaporated is	4 lbs. 54 oz.
Fig. 2	3 16
Fig. 3	3 13 4

Now, this great difference in the total weights evaporated, is due solely to the fact, that, in fig. 1, the conduction boiler being placed nearest the flame, the capability of the conductors was brought more into action, and, consequently, more heat was transmitted by their instrumentality in a given time; and so in proportion when it was placed on the second or third distance from the flame.

I would here observe how these results prove the insufficiency of calculations based on the principle of the evaporative power of a boiler having a necessary and defined relation to its size, or the amount of heating surface of the flue-plates. Elaborate tables of evaporative effects, deduced from comparative surfaces of flues and grate bars, are proved to be utterly at variance with fact, as soon as an improved system of combustion, and a more effective absorption of heat, are brought into action. It would appear, indeed, that an entirely new class of elements and proportions must

LAW INTELLIGENCE.

DISPUTED POSSESSION OF MINERAL PROPERTY.

VICE-CHANCELLOR'S COURT—NOV. 20.

be referred to before we can even approximate to the relative value of any kind of fuel, description of boiler, or size of furnace.

Hitherto, so entirely has the subject of boilers and furnaces been considered as resolvable into mere mathematical calculations, instead of chemical conditions, that our ablest practical men have, unfortunately, had their attention too much directed to elaborating these calculations from data which have no real existence or connexion with the subject. One author (and many follow the same *ignis fatuus*) observes, that "the evaporative power of a boiler is a certain function of the heating surface and area of fire-grate, combined with constant quantities expressing the peculiar heating qualities of the fuel, which can be ascertained, experimentally, to any degree of exactness required." Where this "constant quantity" is to be found has never yet been discovered; and I have already shown that the heating surface and area of fire-grate are wholly irrespective of that evaporative power, of which it is alleged to be a "certain function."

The same author observes, that "the principal elements of the power of a boiler admit of exact mathematical calculations." Now, this is so entirely beside the real questions at issue, and so utterly at variance with fact in every particular, that I may be excused, at present, for not enlarging on it. Tredgold, and other able men, have fallen into the same oversight, attributing to mathematical calculations what exclusively belongs to chemistry—thus unconsciously practising a species of self-deception which has turned them away from the only path that could lead to practical improvement. By many, indeed, we have this carried so far as affecting to give precise formulae for "finding the horse-power—the area of fire-grate—and the area of effective heating surface," and giving them as infallible rules for producing a given quantity of steam. And how can these rules be doubted? Do not we see they are "mathematically correct?" Yet all this display is made without any reference to the quantity of fuel which could effectively be used on any given sized grate—the quantity of heat that could thus be generated—the quantity of air that could, or should, be introduced—the amount of absorbing power which such "effective heating surface" could bring into operation; in fact, without any reference to the real essentials in the case—namely, the perfection of the process of combustion—the amount of available thermometric heat generated—the quantity actually taken up by the water—or the amount of heat lost, by escaping through the chimney shaft.

This is, indeed, exalting mathematics at the expense of chemistry, and on a purely chemical subject; yet, what should we say of the mathematical professor assuming the chemical chair at any of our colleges, and endeavouring to persuade his class that the effective completion of any difficult and complicated process in which those wonderful elements of nature, hydrogen and carbon, oxygen and nitrogen, were to be brought together, and combined, in exact proportions, and at a given temperature, to produce a given effect, was all reducible to "exact mathematical calculations;" and that the effects to be produced, with their curious and involved compounds, were all "certain functions" of the heating surface of the retort, and the area of the furnace or bath, on which the retort was laid, combined with some undefined, though "constant quantities" of the peculiar heating qualities of the fuel employed? Let us ask, if the pupils of such a class were likely to become good practical engineering guides?

Now, the experiments above alluded to (and which I have so tested on the large scale), have proved, that, practically, we may increase, and even double, the evaporative power of many boilers, as hitherto constructed, without enlarging either the fire or the flue surfaces. The great drawback to the production of any given evaporative effect, from any given number of metallic conductors, is to be found in their tendency to become charged with soot in the flues, and which, from its non-conducting influence, too often counteracts the transmitting power of these conductors. This can only be remedied by effectually preventing the generation of smoke in those flues, and which is an additional reason for producing a more perfect combustion of the gaseous portion of coal from which alone smoke is generated.

Another, though lesser, drawback, arises from incrustation, should any portion of the conductors project in the liquor to be evaporated, and from the impediments they present to keeping the interior clean, and free from uncrystallised deposit. For these reasons, I would generally dispense with internal projections.

Orifices, of half-inch diameter, admitting the introduction of half-inch conductors, and without any projection, as shown in the annexed diagram, are fully equal to the transmission of the heat absorbed by the surface of pins of three inches in length. On a future occasion I will, with your permission, furnish some curious and important illustrations of the relative value of quick and slow firing, as referable both to longitudinal and transverse conduction.—*Mechanics' Magazine*.

WATER IN BOILERS.—At the last meeting of the Royal Cornwall Polytechnic Society, Mr. Hunt said his attention was some time since directed to the state of the boilers in Cornwall, and he had been induced to analyse some of the waters, from different mines, used in their boilers. The principal inquiry having been directed to the solid contents of the water, the gaseous combinations were generally unnoticed; the paper described the modes of obtaining sulphuretted hydrogen and hydrosulphuret of lime, and silica, and the states of combination in which the different substances existed in the water. In the analysis of the water, the proportions given were those found in 1000 grains. Analyses were taken from the 250 fathom and 280 fathom levels, at the Consolidated Mines, from the rock at the junction of the granite and killas of Carn Mark, eighty fathoms under the adit. From this spot the water contained an extraordinarily large proportion of sulphate of copper, which the miners were in the habit of separating by means of iron and lime. Analyses were also given from Hallenbeagle, North Roskear, Wheal Jewel, Dolcoath, Wheal Chance, and East Wheal Crofty. The corrosion which took place in boilers of engines in the three last mines was very small indeed, and their pump work suffered only by oxidation, which was more rapidly induced there than usual. An analysis was also given of the water from the bottom of Great St. George, in Perranzabuloe, which was found to be very destructive to boilers. The only way in which to account for the destructive action exerted by this water was by supposing the decomposition of the salts and rapid oxidation of the iron by their elementary combinations. Analyses were given from Wheal Buduick, Polberon, United Hills, South Towan, Wheal Kitty, North Towan, and Great Wheal Charlotte.

ELECTRO-MAGNETISM AS A MOTIVE POWER.—Professor Grove, during a lecture on magnetism, at the London Institution, exhibited a working model of a boat fitted with an electro-magnetic apparatus, on the principle of being dependant on attractions and repulsions consequent on the reversion of the electro-magnetic poles, for its source of power, and acting effectively on an Archimedes' screw propeller; the lecturer, in his remarks on the probable adaptation of electro-magnetism to locomotion, said "to motion there can be no doubt of its application, and effectively for many minor purposes, such as the lathe, &c., but for engines on a large scale the economy of its use becomes an important consideration; for the steam-engine the efficient material may be said to be coal and water, for the electro-magnetic engine zinc and acid, the latter much more costly at present than the former. There have been, however, numerous instances in which increased demand has considerably reduced the market value of the manufactured stuff, and not lessened the manufacturer's profit; we mean that production on a large scale is frequently less expensive than the obtaining the same material in small quantities. What would be the market cost of coal, for instance, raised by the expensive machinery of the Durham pits, if the consumption were hundreds, only, instead of thousands of tons annually? The great demand for coal, then, has reduced in this respect its market value; and why may not in time zinc and acid be lowered in price if they were used generally for locomotive engines? There is another assistant to the economic use of the electro-magnetic engine, whilst not working, the zinc and acid are not wasting, the duty of the engine is proportional to the consumption of the fuel. This is not the case with the steam-engine, coal is being burnt when the engine is at rest."

GAS A SUBSTITUTE FOR COKE.—A correspondent of the *Mechanics' Magazine*, in a communication on the employment of gas as a substitute for coke in locomotive engines, asks—Might not gas be used with great advantage to heat the water? Jets of gas might be burnt in the tubes of a boiler, no sparks or cinders would then annoy the passengers, or ignite the goods in the trains; the fire could be raised instantaneously, and be regulated with the greatest nicety; it would require much less attention, and, I believe, be more economical. Gas is condensed and made portable, and these holders might be carried in lieu of coke; so far as raising the steam is concerned, gas would be far superior to coke, and to stationary engines, I am convinced, it might be applied in lieu of coal with advantage.

GREAT NORTHERN RAILWAY.

RAIL COURT—NOV. 20.

THE QUEEN v. THE COMPANY.—Mr. WATSON moved the court in this case for a rule to show cause why a *mandamus* should not issue, directing this company, through its managing directors, to proceed in the completion of the line of railway, for the construction of which it had obtained an Act of Parliament in 1836. By that Act it was provided that they should carry their line of road from Gateshead, near Newcastle, by Durham, down to the River Tees, near Darlington. By a second Act, provision was made for a line from the Tees to York. The latter line had been completed by the company, but that which was to go northwards, only the small portion from the Tees to Darlington had been attended to. An expensive embankment would be requisite in the neighbourhood of Durham, and, in consequence of that, the company seemed determined not to execute this portion of its line. It seemed more determined to carry on a line to Newcastle, by deviating some five or six miles from that designated in its first Act, and availing itself of three railways already formed in that newly-selected direction, for the purposes of the coal trade. This latter alone would be a most objectionable arrangement, as passengers on a public line would seriously object to encounter the coal trains which would be constantly in movement about them. The company had not done anything towards constructing the road by Durham to Gateshead for the last five years.

Mr. Justice PATTERSON.—They cannot proceed to the completion of this new line without the authority of another Act of Parliament, and if they succeed in obtaining that, this motion would fall to the ground. I rather think that the proper place to fight out this difference is elsewhere than in this court.—His lordship, however, granted the rule to show cause.

LAW OF JOINT-STOCK BANKS.

COURT OF QUEEN'S BENCH, DUBLIN—NOVEMBER 20.

WRIGHT v. MURPHY.—The CHIEF JUSTICE delivered judgment in this case, which came before the court on a demurrer to the plaintiff's declaration, setting forth that the plaintiff sued as one of the public officers of the Liverpool bank. The demurrer contained two grounds of objection:—first, that the Act of Parliament, allowing the public officer to sue on behalf of the bank, was a private Act; and, secondly, that, supposing it to be a public Act, the Act of Parliament was not a private Act, for it was printed amongst the statutes at large, and accordingly the English Act had been sued upon, without exception, in the case of "Hughes v. Thorpe," 5 Meeson and Welsley, p. 656. In that case a number of objections were taken by the defendant, but he never thought of insisting that the Act was a private Act. When the court considered the nature of the 7th Geo. IV., it appeared impossible to say that it was not a public Act. The preamble had reference to the 39th and 40th Geo. III., by which latter Act the Bank of England advanced three millions of money to the public for having their charter extended; and this being a dealing between that bank and the public, could not be considered a private transaction, or the subject of a private Act of Parliament. One of the main objects of the 7th Geo. IV., which referred to the 39th and 40th Geo. III., was to get the Bank of England to forego that part of their privileges which prevented more than six persons acting as partners in a bank. The proposed arrangement was carried into effect, and the Bank of England renounced their exclusive privilege, provided that copartnerships of more than six persons were not carried into effect nearer than within sixty-five miles of the city of London. All this clearly showed that the Act of Parliament was one of a public and general nature. Then, with respect to the question as to whether the 10th section extended to Ireland, it was evident that a banking concern, consisting of thousands of partners, could not possibly carry on business except they had the right to sue by their public officer, for a suit commenced by them would necessarily become abated before it was brought to a termination by the death of some one of the parties; and, therefore, it was essential to allow them to sue and be sued through a public officer. It was as necessary to act upon that principle in Ireland as in England. The 10th section was quite general—it spoke of all suits—and as it had been passed by the legislature of the United Kingdom, which just had as much right to bind Ireland as England, there was no reason why it should apply solely to England. When the language of the Act was general, the natural construction to give it was one that would tend to the benefit of the public, unless controlled by precise words. The learned Judge, after referring to cases in Barnewall and Cresswell, p. 17, and 1st Barnewall and Adolphus, 709, announced the opinion of the court to be, that the demurrer should be overruled.

SHEFFIELD CANAL AND THE ROTHERHAM RAILWAY.

ROLLS' COURT—NOV. 22.

THE CANAL v. THE RAILWAY COMPANY.—This cause, which was begun on Saturday, occupied the whole of this day, and was not concluded when the court rose. The bill was filed by the Canal Company for the specific performance of an agreement between them and the Railway Company, contained in the letters set forth in the plaintiff's bill between the solicitors of the respective companies, and it prayed that the Railway Company might be directed to invest a sufficient sum in Government securities upon trust, to secure the payment of 100l. a-year to the Canal Company, for the purposes mentioned in the agreement.

In 1835 the projectors of the railway applied to Parliament for their Act, but in its progress the Canal Company procured a clause to be inserted, in which, after reciting "that the Canal Company were, by their Act for a canal from Sheffield to Tinsley, required for ever to repair the road from Tinsley Wharf to Lady's Bridge in Sheffield, and for that purpose were authorised to take a toll of 1d. a ton for goods brought from Tinsley, upon the River Deen, and also 1d. for every 25 cwt. of goods carried from any wharf up and down that river, and that the establishment of the railway would have the effect of diminishing these two tolls," it was enacted "that the Railway Company should, after the railroad was complete, pay the Canal Company 100l. a-year." In consequence of the introduction of this clause, the Railway Company did not follow up their bill, which dropped; but, in 1836, another bill was brought in, which passed the Commons without a similar clause, and was carried up to the Lords, read a second time, and committed. The plaintiffs then petitioned against it, and their lordships' committee were of opinion that the plaintiffs were entitled to an indemnity for the diminution of their tolls; but as the insertion of a clause similar to that in the former bill, being a money clause, would endanger the passing of the bill, it was recommended that there should be a private arrangement between the parties. In consequence, interviews, and the correspondence stated in the plaintiff's bill, took place between the solicitors of the respective companies, which ended in a letter from the solicitor of the Canal Company accepting the engagement of the Railway Company upon the terms of the two documents (viz., letters) of the solicitor of the Railway Company. Upon this the opposition to the railway bill was withdrawn, and it passed the Lords and received the Royal assent. Differences had since arisen between the two companies, and the present bill was filed.

The arguments were concluded on Tuesday—Lord Langdale postponed his judgment.

THAMES JUNCTION RAILWAY COMPANY.

COURT OF CHANCERY—NOV. 22.

PLAYFAIR v. THE COMPANY.—The plaintiff is one of the original shareholders in the projected railway to connect the Birmingham and Bristol lines with the River Thames and the South Western Railway. Seeing some reason to abandon the company, he refused to pay up the calls on his one hundred shares, and the company brought an action against him for the amount; a verdict was taken, subject to the opinion on a special case of liability, and that question is not yet disposed of. Before the trial of the action the plaintiff filed his bill, and the Vice-Chancellor granted an injunction, but Lord Cottenham dissolved it, and allowed the trial to proceed, being of opinion that, as the plaintiff alleged, he had an equitable as well as a legal defence, there ought to be no bar to the proceedings. The cause, therefore, was called on for hearing in its turn.

Mr. BETHEL, before he opened the case, suggested the propriety of its standing over till the legal question was decided.

Mr. RICHARDS and Mr. WIGRAM saw no necessity for any postponement; the plaintiff alleged in his bill, as the ground of his application to the court, that he had no good legal defence. Whether he had or not would be seen; but, in the meantime, the court could determine whether he had any equitable defence.—Mr. BETHEL apprehended that, both in equity and elsewhere, the real question was, whether the plaintiff had a legal defence; if he had not, the matter was at an end.

The Lord CHANCELLOR, with such an admission on the part of the plaintiff, saw no advantage in hearing the cause, as, if the decision of a court of law was against the plaintiff, the only question to be determined in a court of equity would be one of the costs of the suit.

Mr. RICHARDS acquiesced in the propriety of this suggestion, and the cause, therefore, stands over.

LAW OF PARTNERSHIP—PROMISSORY NOTES.

COURT OF COMMON PLEAS—NOV. 23.

MILLER v. THOMPSON.—This was an action on a promissory note, conceived in the following form:—"London Joint-Stock Banking Company, Dorking Branch, 24th of August, 1839. Six months after date pay without acceptance, to the order of J. E. Francis, Esq., 100l., value received. Signed, for the directors, Thomas Newham, manager." The note was addressed to the London Trades Joint-Stock Bank, 33, Gracechurch-street, and was endorsed by Francis, the managing director of the "Dorking branch," to the plaintiff. The cause was tried before Lord Chief Justice Tindal, and a verdict was found for the plaintiff—to set aside which a rule nisi was subsequently obtained, in order that the verdict might be entered for the defendant instead, upon the ground that the instrument sued on was a bill of exchange, and not a promissory note.

Sir T. WILDE now showed cause. Newham, as manager of the Dorking branch of the bank, was, in point of fact, the agent for the whole company, and, as he signed for the directors, the instrument was merely a promissory note, given by the parties by whom it was to be paid. At the worst, it was an ambiguous instrument, and might, therefore, be treated either as a bill of exchange or a promissory note.

Mr. Serjeant CHANNELL, in support of the rule, contended that the document was a bill of exchange, although it bore on the face of it the words "without acceptance." The instrument was not drawn by the company at large, but only by one of the directors upon the company.

The COURT said, that, upon looking at the instrument, it appeared to be drawn by one of several partners, and it purported to contain an order for the payment of a certain sum of money by the partnership at another place. This, they thought, was virtually a promissory note. There appeared to be only one firm, whose business was carried on partly in London and partly at Dorking. The instrument, then, was a mere promise by the partners at Dorking to pay out of the partnership fund in London.—Rule discharged.

BIRMINGHAM AND GLOUCESTER RAILWAY.

COURT OF QUEEN'S BENCH—NOV. 23.

PARKES v. THE COMPANY.—This was a rule calling upon the undersheriff of Warwickshire to review his taxation of the costs which had been incurred in an inquiry which took place for the purpose of ascertaining the sum which the defendants were bound to pay to the prosecutor as a compensation for some of his land, which they had taken for the purposes of the railway. The jury assessed the damages at 500l., and no tender of any sum had been made by the company. The sheriff, upon the taxation of costs, allowed some parts, and disallowed others, including the fees which had been paid to the counsel who appeared for Mr. Parkes.

The COURT, after having heard some arguments upon the construction of particular passages in the company's Act, directed the subject to be referred to the Master.

BIRMINGHAM AND GLOUCESTER RAILWAY.

RAIL COURT—NOV. 25.

THE QUEEN v. THE COMPANY.—Mr. Serjeant TALFOURD moved the court in this case for a rule to show cause why a *mandamus* should not issue, commanding the directors of the Birmingham and Gloucester Railway Company to summon a jury and have compensation assessed to a gentleman named Guest for damages done to him by the transition of their line of works through his land. These damages have been caused by their deepening the bed of a river, by which Mr. Guest's land had been irrigated, and he was now wholly deprived of that advantage, to his most serious loss. He remonstrated against this proceeding, and the surveyors of the company took cognisance of what had occurred, but nothing had been done by them in the way of remedy. He, therefore, made an application to the directors of the company, calling on them for compensation to the amount of 450l.; at which he estimated his damages, or else that they should summon a jury to decide on the matter according to the provisions of the Act. He further informed them that if they did not answer this communication, he should be under the necessity of making application to this court. A meeting of directors took place, as had been anticipated, but they took no notice of this matter, and their solicitor informed Mr. Guest that he had no answer to his letter. It only remained for Mr. Guest to come to this court for redress.—Rule granted.

LAW OF PATENTS—QUESTION OF INFRINGEMENT.

ROLLS' COURT—NOV. 25.

WILSON AND OTHERS v. TINDALL.—Mr. PEMBERTON, Mr. ROTCH, and Mr. HUBBOK moved on behalf of the plaintiffs (Messrs. W. Wilson, J. S. Brownrigg, J. Cockerell, and Sir G. G. de H. Larpent, Bart.), who had a factory at Belmont, Vauxhall, for an injunction to restrain the defendant, William Tindall, from using or exercising the invention or discovery of a new preparation or manufacture of a certain material produced from a vegetable substance, and the application thereof for the purposes of affording light, and for other uses; and from making, using, and vending the substances called "stearine" and "elaine," produced from cocoa-nut oil, by means of those inventions or any imitation thereof; or any candles manufactured from or compounded of the substance called stearine, during the remainder of the term for which the letters patent (which were dated 9th September, 10th George IV.) were granted. It appeared that the original patentee was James Soames the younger, from whom the plaintiffs claimed. The invention was to separate by pressure the oil of cocoa-nuts, by separating its elaine or more fluid parts from its stearine or more solid parts. By means of this invention it was stated that the plaintiffs had for the last eight years manufactured cocoa-nut candles, and liquid oil expressed from cocoa-nut oil, which they sold in retail shops in Regent-street and Oxford-street, and it was for the alleged infringement of the patent that the motion was made.—The hearing of the case occupied the whole day, and was not concluded at the rising of the court.

The arguments were resumed and concluded on Friday morning. The MASTER of the ROLLS said that with regard to the argument of the validity of the patent, from its long enjoyment by the plaintiff, and the evidence in the affidavits, he was of opinion the injunction prayed, for ought to be granted. The question for consideration was whether any terms ought to be imposed upon the plaintiff, or other means used for investigating the facts than those adopted in the usual course of proceedings. It was to be observed that all orders made on applications of that kind were merely interlocutory; the injunction, of course, would be only an injunction until further order. Notwithstanding this order, the defendant might put in his answer, by which he might possibly disprove the affidavits, and the parties might respectively proceed to evidence; and on the hearing of the case, the law with regard to it, and the facts in the depositions, would have to be reconsidered, which re-consideration, for aught he knew to the contrary, might justify the Court in coming to a different conclusion than that come to on the present occasion. The defendant had expressed his desire to have the matter tried at law; and though he had no doubt whatever of the competence of the court to decide without it, the question was, whether it was not a more convenient mode of proceeding to have it tried before the tribunal most proper for the decision of legal questions, and where the facts could be better investigated. It was not, therefore, with respect to any doubt that could be entertained of the validity of the patent, that he had made an order for a trial, but because he thought it the most convenient mode of making the further investigation prayed by the defendant; he, therefore, directed the plaintiff to bring an action to try his right, the injunction being granted in the terms of the motion.

POPULAR DELUSIONS.—Among the most absurd and preposterous speculations that have received encouragement from the public, and which shows more completely than perhaps any other, is one recorded in Mackay's *Memoirs of Popular Delusions*, as having been started by an unknown adventurer, entitled "a company for carrying on an undertaking of great advantage, but nobody to know what it is." Were not the fact stated by scores of credible witnesses, it would be impossible to believe that any person could have been duped by such a project; the man of genius who essayed this bold and successful inroad upon public credulity, merely stated in his prospectus that the required capital was half a million, in 5000 shares of 100l. each, deposit 2l. per share; each subscriber, paying his deposit, would be entitled to 100l. per annum per share. How this immense profit was to be obtained he did not condescend to inform them at that time, but promised that in a month full particulars should be duly announced, and a call made for the remaining 98l. of the subscription. Next morning, at nine o'clock this great man opened an office in Cornhill, crowds of people beat his door, and when he shut up, at three o'clock, he found that no less than 1000 shares had been subscribed for, and the deposits paid; he was thus, in five hours, the winner of 2000l. He was philosopher enough to be contented with his venture, and set off the same evening for the continent.

DERBYSHIRE DIAMONDS.—Perhaps it may not be generally known that the Peak of Derbyshire produces what are termed Derbyshire diamonds; they are small detached and perfect crystals of colourless quartz, of an hexagonal prism terminated by pyramids, and of a lighter colour; they are often found at Bakewell, Brassington Common, Buxton, Castleton, and Darley Dale, and are greatly inquired after, and much used by the lapidaries of Birmingham, Derby, &c.—*Sheffield Iris*.

PROCEEDINGS OF PUBLIC COMPANIES.

BRITISH IRON COMPANY.

In the report of the proceedings of the above company, which appeared in our last Number, it will be seen that Major RICHARDSON moved the following resolution:—

That the report and balance-sheet now read be printed and circulated among the shareholders, and that the same be taken into consideration this day fortnight, at the adjourned general meeting to be then held.

On which Mr. RICARDO moved, as an amendment—

That it is the opinion of this meeting, that in the present depressed state of the iron trade, it would be most injurious to the proprietors (if not absolutely impracticable) to dispose of the several works of the company; and that it is essential to maintain them in a state of efficiency, and to preserve the large and valuable trade connected with them, but that, subject to the above paramount considerations, it is also the decided opinion of this meeting that all the future operations should be conducted with a view to the disposal of the works, and the ultimate dissolution of the company. That as, in the meantime, the only means of meeting the promissory notes of the company is by payment of those calls for which every shareholder is morally and legally responsible, and on the faith of which they were issued, the directors be required to continue to take the most active measures for enforcing payment of the calls from such proprietors as have made default. That the following gentlemen be appointed a committee to co-operate with the directors in carrying into effect, whenever the proper opportunity shall arrive, the intention, as above expressed, of disposing of the works and property of the company, with a view to its ultimate dissolution, and that the committee have power to add to their number—viz. Messrs. Gideon Colquhoun, Thomas Gibbes, Simon Ricardo, Robert Barnett, Charles Kerr, William Morris, John Abel Smith, and William Tetlow Hibbert.

A ballot was then demanded on the amendment, and was taken on Thursday, the 25th inst. The numbers were—

For the amendment..... 1662 representing 8310 shares.

Against the amendment..... 6 „ 30 „

Majority for the amendment..... 1656 „ 8280 „

After the ballot was demanded, Major RICHARDSON moved the following resolution:—

That in order to prevent the funds of the company being squandered by useless litigation, and the shareholders generally being unnecessarily harassed by actions at law, it is resolved that no new actions or suits shall be brought, or any further legal proceedings taken to recover any call or calls until the pending six actions against the "united shareholders" shall be first decided, which were commenced in April last.

A ballot was also demanded, and taken at the same time as the former.

The numbers were—

For the resolution..... 11 representing 55 shares.

Against the resolution..... 1657 „ 8285 „

Majority against the resolution .. 1646 „ 8230 „

The above results sufficiently show the weakness of Major Richardson's party, as well as the uselessness of his continuing to oppose the great body of the proprietors, who have confirmed all the acts of the directors, and, by their votes, sufficiently expressed their confidence in the management of the company.

SOUTH-EASTERN RAILWAY.

The half-yearly general meeting of the proprietors of the above railway was held on Thursday, the 25th inst., at the London Tavern.

JOSEPH BAXENDALE, Esq., in the chair.

The SECRETARY having read the advertisement convening the meeting, the CHAIRMAN called upon him to read the directors' report, which gave a very favourable view of the undertaking, and stated that the wet weather, instead of being of any detriment, had been of great service to the line, it having had the effect of consolidating the embankments. The whole of the land had been contracted for, and, on the 1st of last October, the sum unpaid amounted to 53,991*l.*, a portion of which had since been paid. It also alluded to the raising of 120,000*l.* additional capital, for the payment of the company's share of the joint-station at London-bridge. The directors, in conclusion, stated their unabated confidence in the soundness of the undertaking.—The statement of accounts showed a balance in hand of 26,361*l.* 5*s.* 1*d.*

Mr. Cubitt's report was then read, in which he still stated his firm conviction that the line would be completed within the amount of the original contract. It also repudiated the different statements that have appeared in the public papers of the accidents that have occurred in consequence of the high tides and winds having detached portions of the cliffs, but, so far from any injury having been done, the company had benefitted considerably. No falls of cliffs had taken place, excepting in those places where the company would have been obliged to have gone to great expense to remove them. Plans, with estimates, amounting to between 8000*l.* and 10,000*l.*, had been prepared, for the removal of the promontory of chalk, near the west entrance of Shakespeare's Tunnel, for more than twelve months, but the money was more required in the Tunbridge division—so it was all-well to stand over. There was now no doubt, that that mass will come down in the course of the ensuing winter, and thus the company be saved so great an outlay. He concluded, by observing that the portion of railway from Dover to Folkestone would be equally safe with any other portion of the line.

The CHAIRMAN having said a few words explanatory of the report, expressed his firm conviction that the railway would be completed within the amount first named; he then moved that the reports and statement of accounts be printed and circulated amongst the proprietors.

Mr. TYRRELL asked several unimportant questions about the accounts, &c., some of which were very irregular, and all of which were satisfactorily answered by the secretary.—Mr. PARSONS then praised the manner in which the books were kept, and, as a proprietor, felt obliged to the directors for the concise and unequivocal half-yearly reports and statements that they had made, and he felt assured that the estimate would be worthy of the name. What would be the expense of the London-bridge station?—The CHAIRMAN replied, 250,000*l.*, or 85,000*l.* to each company.—Mr. PARSONS hoped that no extraordinary expense would be incurred in decoration.—A long string of questions was then put, to which the answers were satisfactory.

Mr. BETTS expressed his entire satisfaction as to the working of the new sleepers and the efficiency of the wooden pins, stating that they were introducing a plan that must be generally adopted.—Mr. CUBITT explained that the sleepers had been kyanised on the high pressure system of 80 lbs. per square inch.

The motion for the adoption of the report was then carried unanimously.—Resolutions to the effect that the forfeiture of 3368 shares should be confirmed, were then carried.

Mr. FIELD, after stating the distressing state of the affairs of Mr. John Williams, whose claims upon the company were well known, put in a recommendation, signed by fifty-five influential shareholders, recommending that 493 free paid-up shares should be given to him as compensation for the losses he had sustained, and made a motion to that effect. The resolution, after a long discussion, in which the proprietors lamented the unfortunate condition that gentleman had placed himself in by his taste for speculation, was negatived by a large majority, only three hands being held up in favour.

A long discussion then ensued as to the manner in which forfeited shares should be disposed of.—Mr. HILLIARD recommended them to be distributed *pro rata* amongst those proprietors who had paid up all calls due upon their shares; at first a great opposition was made, it being pronounced impracticable, and many objections, both legal and of convenience, were made, but all of which Mr. Hilliard very ably overruled. He accordingly moved, by the consent of all, a resolution to the effect of his recommendation, which was carried unanimously—the price at which they should be issued being left to be fixed by the directors.

Mr. FIELD then moved that the judgments against Mr. J. Williams be vacated, which was carried unanimously.—Mr. FIELD returned thanks, in the name of Mr. Williams, for the kindness of the proprietors.

Thanks were then voted to the chairman, directors, and the engineer, and the meeting broke up, the proprietors expressing their satisfaction at the good prospects which existed of the success of the line.

PARIS AND ROUEN RAILWAY.

A meeting of the English shareholders of this undertaking was held at the Clarendon rooms, Liverpool, on Wednesday last, to hear a report prepared by the directors, who have recently returned from an inspection of the works and an inquiry into the aspect of the company's affairs; it is well known that the bulk of the funds has been furnished from this country and a great proportion, we believe, has been provided by the enterprising capitalists of Liverpool.—The report read to the meeting gave a highly satisfactory and flattering account of the state and progress of the road, which will be completed by the month of March, 1843; it was set forth, as a proof of the opinion of the directors, that, since the last meeting, they had all increased the number of their shares, so satisfied were they with the prospects of the concern.—Mr. Locke, the engineer, gave an account of the state of the works, comprising the statements of the report, and showing that all was proceeding most favourably; the work would be finished at the time above mentioned, and the road might be opened as soon after as the proprietors deemed expedient. The estimate was not merely sufficient, but it was probable that the expenditure would not reach it in amount.—Mr. REID, the secretary, explained the mode of purchasing the land, and confirmed the preceding statements as to the favourable prospects of the concern.—Sir JOHN EASTHOPE, Bart., expressed opinions to the like effect.—Mr. CHAPLIN gave some particulars of the traffic which may be expected on the railway when opened; his statements were listened to with great interest, as adding to the cheering prospects of the shareholders.—The thanks of the meeting were voted to the directors for their exertions on behalf of the proprietors, and also to John Moss, Esq., for his conduct in the chair; after which the assembly broke up.

ON THE USE OF ANTHRACITE FOR STEAM NAVIGATION.

[FROM A CORRESPONDENT.]

The use of anthracite for steam navigation becoming a subject of much discussion, I beg to offer you a few remarks on the comparative effects of the two descriptions of coal, anthracite and bituminous, in combustion. Many persons express their surprise that the use of the former has not long ago superseded that of the latter, for the above purpose. The reason that it has not done so arises, in my opinion, from the circumstance, that no other means have as yet been adopted to assist the effects of anthracite in combustion: than those resorted to to assist the combustion of bituminous coal—viz., increasing the draught. Now, a careful examination of the chemical composition of the two coals, the different operations of combustion, and the products of their combustion, must prove that something more is requisite. When bituminous coal is thrown upon a fire, much volatile inflammable matter is immediately disengaged with considerable force, carrying off with it a large portion of light particles from the coal. When a sufficient supply of oxygen, over and above what is necessary to keep up the combustion of the fire, is drawn through it into the flues, this volatile matter, with the light particles carried along with it, will burn in the flues, and give out a great heat; but oxygen being deficient, as is generally the case, a volume of black smoke issues from the chimney or funnel, which consists of the most valuable part of the coal (the gas, tar, and lamp-black) totally lost as fuel, and annoying passengers on board. The volatile and lighter parts of the coal are quickly driven off, leaving the coke a porous mass in the fire-place. It may be considered that too little air is generally passing through the fire when fresh coal is first thrown on, and too much afterwards. While the volatile matter is burning, or partially so, the steam is forced up high, but the volatile matter (hydrogen and its compounds) being all expelled, and leaving only coke in the fire-place, through which too large a quantity of cold air is passing, and the coke giving out merely radiated heat, the steam soon gets low, thus producing an alternation of a surplus and deficiency of steam. On the other hand, anthracite, containing no combustible principle but carbon, a bad conductor of heat, when thrown upon a fire, shuts off the heat from the boiler, until it becomes fully ignited, which it does slowly; consequently, fresh anthracite coal thrown on to a fire has a contrary effect to that of throwing bituminous coal upon a fire. When an anthracite is urged by a powerful draught, the heat acting merely by reflection, much is lost out at the ash-pit, and by the iron door and front of the fire-place, and all the heat which is acting upon the boiler is upon that part immediately in contact with the fire, excepting a small portion carried by the heated air into the flues, the coal being so close and compact a mass of carbon that it merely burns at its surface, and allows no passage of air through it; at the same time the effect of heated air upon the flues of a boiler appears to be but slight, although made powerful by compression, as in the hot-blast. Another defect in anthracite, arising from its being a bad conductor of heat, is that, when thrown upon a hot fire, the surfaces of the lumps of coal heating and expanding before the interior does, the surfaces crack and shiver off in small fragments, filling the fire-place with small coal, which not having the property of binding or caking, run from the fire-bricks without being consumed, and consequently so much fuel is lost. Anthracite, certainly, when fully ignited, makes an intensely hot and steady fire, but the heat is merely what may be termed local or fixed, or acting on bodies at a short distance by radiation. I suggested some time since that the application of the vapour of water to an anthracite fire would remedy the objectionable properties of the coal, and have had various opportunities of trying experiments upon a large scale, with the view of ascertaining the most effective and the simplest mode of application. It appears to prevent the decrepitation of the coal—to carry off the radiation of heat from the ash-pit and front of the fire upwards into the flues—and to keep up a steady and regular supply of steam. The rationale may be considered to be, that the vapour of water passing through ignited carbon is decomposed, and its elements, oxygen and hydrogen, both combining with portions of carbon, produce a quantity of volatile inflammable matter, which meeting a supply of oxygen, after escaping from the fire, keeps up combustion, and generates heat in the flues of the boiler, thus adding to anthracite a steady and continuous supply of the volatile principles of bituminous coal, in such a way that it is constantly in action, without the possibility of any loss of fuel. This plan, brought into use in steam-vessels, must lead to most beneficial results, as it will effect a saving of one-half the fuel now used—the means of keeping up steam more steadily and uniformly—do away with the annoyance of smoke—be attended with less labour in firing—and, by carrying off the radiated heat from the fire-place, will render the engine-room comparatively cool. This latter consideration, to parties employed on board steamers plying upon stations in hot climates, must prove of no little importance. I have been informed the sufferings of the firemen on board steamers in the East Indies are very great.

COAL-FIELDS OF GREAT BRITAIN.

[From the Glasgow Practical Mechanic.—Continued from Mining Journal Oct. 50.]

UPPER COAL SERIES.—The upper coal formation is of more limited extent than the under, but the deposits are much more regularly distributed over the areas in which they occur. This remark applies particularly to the valuable strata of coal and ironstone found in it. It contains no beds of limestone. The sandstones are neither so thick nor so good as those which occur in the older or newer strata; they are generally of a whitish or grey colour, and sometimes spotted red or yellow from the oxidation to which the stone has been subjected. This is almost always the case where a portion of the rock is in contact with the superincumbent alluvium (1). The sandstones are frequently granular, and when so, occur in layers, divisible by joints, and cleavage into rhomboidal masses. Flagstones occur in some places of good quality; they are slightly micaceous; when the mica (2) increases in quantity, the layers split into thin laminae, and are useless. These graduate into a slaty carbonaceous shale, known in the west of Scotland by the name of Faikes, which again, by insensible degrees, passes into clay-shale with scales of mica; this again becomes darker and darker in the colour from the presence of carbon, till we have bituminous (3) shale; which again as insensibly passes into cannel coal, or carboniferous (4) (black band) ironstone, as carbon or iron prevail, or are mutually associated, forming what may be properly denominated a shale ironstone.

The ironstones are either carboniferous or clayey in their composition; in either case they commonly contain in weight about 30 or 33 per cent. of the metal. The superiority of the black band ironstone is, that it contains a sufficiency of carbonaceous matter to calcine it, and when calcined (5), is free from the clay contained in the other. The mixture of both ores, however, in the furnace, tends to improve the quality of the iron.

The coals of the upper coal formation, if their developments in different localities are taken into account, are above thirty in number; seven or eight of these, however, are all that are workable, the rest seldom measuring more than eighteen inches, a thickness below which a coal seam ceases to be valuable. The coals are divisible into soft cubical coal, splint coal, smithy coal, blind coal, or anthracite (6), and cannel, or parrot coal. The first of these, the cubical coal, is preferred for household purposes, being, when pure, capable of producing intense heat. Splint coal, as the name implies, is divisible into horizontal plates, which, when laid open, show a frost-work like appearance of carbon. We have no evidence from the plants which occur in immediate contact with the coal beds, that the difference in the structure of coal is in any way owing to the plants of which it was formed being of a different sort. The difference must have, therefore, arisen from the character of the agency which produced the conversion of the ligneous matter into coal; whether that existed in the acid produced in the process of decomposition, in the medium of deposition, or in the electrical agencies to which it was probably subjected, it is difficult to say. We have seen a coal-bed completely spoiled when in contact with a very indurated sandstone. The effect being quite similar to that produced by the proximity of trap; a circumstance in favour of the supposition, that the electrical or magnetic fluid has exerted a powerful influence in effecting the different modifications of the various rocks, particularly coal.

Cannel coal is a compact substance, containing a greater quantity of inflammable matter than the other varieties. It occurs in both the Ayrshire and Lanarkshire upper coal series, but is not found of such good quality as that of Lesmahago, which is connected with the lower coal formation. Smithy and blind coal are found only where the trap exists; the action of which has expelled the bituminous matter, and reduced the mass to a more carbonaceous state. The minerals mentioned constitute the strata of the coal formation. They occur in no determinate order, if it be not this, that coal generally rests on a stratum of soft shale (7), denominated daugh, in which vegetable impressions are peculiarly abundant—a circumstance which has been supposed to favour the theory, that the coal beds are laid on the same spot where the plants grew from which they were derived; a hypothesis also strongly corroborated by the ripple marks observable in the adjacent strata; these denoting the presence of shallow water. Such a hypothesis is certainly attended with great difficulties, but as plants are frequently found in coal strata, in the vertical position in which they grew, and coupled as this is with ripple marks, we think the balance is in favour of the subsidiary hypothesis (8). The extensive area that some beds are known to occupy, mea-

suring many square miles, and the great uniformity preserved in their thickness through the whole extent of that area, seems fatal to the supposition that the wood was drifted from a distance. Indeed we are quite unable to conceive, under any possible condition, such vast collections of drift timber as would have been requisite. "Coal," says Mr. M'Laren, "was analogous in its origin to common peat, and each bed was most probably formed on an extended surface of marshy land, covered by a rank vegetation. The finest coking coal Mr. Hutton considers as a crytalline compound, whose constituents had been in a state of solution, but slate coal and cannel coal often bear distinct impressions of plants. The new method of cutting minerals into slices as thin as to be transparent, in which Mr. Witham has made so happy use, has been applied to coal; and by examining these with the microscope, the vegetable structure has been detected where no external trace of it was visible. In cannel coal, it exists throughout the whole mass, while the fine coal retains it only in small patches, which appear as it were entangled mechanically. Among other indications of the ligneous origin, tubes have been discovered filled with a resinous matter, which is the most volatile part of the coal, being what is first driven off by heat. All coal had, therefore, originally existed in the state of plants or trees. About 300 species have been found in the sandstones and shales of the coal-measures, and the greater part of these probably exist in the coal itself, though the tenderness and opaqueness of the material render it difficult to detect them by examination. The 300 species are all extinct; about two-thirds are ferns, the others consist of large (9) conifers (allied to the fir or pine), of gigantic lycopodiaceae (10) and of palms. The plants indicate a moist climate, as hot as that of the tropics; and this holds true in the coal plants, not only in England, but at Melville Island, within the polar circle. Dr. Hutton thought that the vegetables had been carbonised by heat; but Dr. Macculloch contends, and that on good grounds, that the change has been effected solely by water and pressure, and that by these agencies peat is capable of conversion into coal."

The entire thickness of the upper coal series of Lanarkshire, including the upper red sandstones, is about 260 fathoms; a proportion of this enormous mass consists of finely laminated (11) clays, derived, no doubt, from the mud of former rivers. If the deposits of these were regulated by circumstances, we can arrive at no other conclusion, but that the time required for their accumulation was immense. This is further proved by many of the beds containing through their whole vertical extent casts of fresh water shells of all sizes. Some of these occur in shale in the state in which they lived, the hinge of the shell being always upmost; where they form beds, they lie horizontally in the most confused condition—one generation having lived after another, till a stratum measuring sometimes a foot or more in thickness had been deposited, consisting almost exclusively of their shells. The black band ironstones contain these shells in abundance, as also the impressions of plants with the scales and bones of fishes. We shall give a more particular account of both the Ayrshire and Lanarkshire seams and massive-band, as also of the nature and distribution of the ironstone beds in the west of Scotland, in our next Number.

(1) Alluvium—Sand, gravel, or clay, deposited in the older rocks. (2) Mica—A simple mineral having a shining silvery surface, and capable of being split into thin elastic leaves. (3) Bituminous—Containing bitumen or mineral pitch, the substance to which coal is principally indebted for its inflammability. (4) Carboniferous—Containing carbon, the principal ingredient of wood or coal. (5) Calcined—Heated to a cinder or powder. (6) Anthracite—Coal deprived of its bitumen, and having a shining lustre like black lead. (7) Shale—Indurated slaty clay. (8) The hypothesis which supposes that the strata referred to was formed under water, and left bare by the subsidence of the waters. (9) Coniferæ—An order of plants, which, like the fir and pine, bear cones or tops in which the seeds are contained. (10) Lycopodiaceae—Plants of inferior organisation to conifers, some of which they resemble in foliage, but all the recent species are infinitely smaller. They are called club-mosses in England, and grow principally on mountainous heaths. (11) Laminated—Occurring in thin leaves or plates.

[To be continued.]

COMMUNICATION FROM THE ATLANTIC TO THE PACIFIC OCEAN, ACROSS THE ISTHMUS OF DARIEN, OR PANAMA.

[FROM A CORRESPONDENT.]

The importance of obtaining some improved means of transit across the Isthmus of Darien, or Panama, is every day becoming more manifest; projects have from time to time, during a long series of years, been brought forward, but from some untoward circumstance have each alike shared the fate of being cast into oblivion; and nothing has yet been done. We are, however, now possessed, through the explorations that have been made, of some of the general features of this neck of land; and we may learn from them that the practicability of a road or railway communication is established; but of the practicability of a ship canal there appears much doubt, notwithstanding such schemes have been proposed at different localities on the Isthmus, and under varying circumstances; of these last named projects, the two that have acquired most attention are, one from Chagres, on the Atlantic shore, to Panama, on the Pacific, in the State of New Granada; the other from the river St. John, on the Atlantic, by way of the Lake of Nicaragua, to the port of St. John, on the Pacific. The distance across the Isthmus from Chagres to Panama, taking the valley of the river Chagres as part of the course, is about forty-six miles, and the height of land (in the best direction for a canal communication) about 500 feet. Commencing on the Atlantic shore, and following generally the line of the valley for thirty miles, we should have to make an ascent of about fifty feet; for this portion of the line the works would consist of open cuttings and the necessary lockage, to which, at this distance and elevation, a tunnel ten miles long must follow, and the remaining distance of six miles to Panama would be of open cutting and lockage down to the Pacific. If we consider the immense cost of such a work as a ship canal under these circumstances, the probable difficulty of obtaining an adequate supply of water, and, above all, the fact that the works would be constructed in a district constantly subject to earthquakes, no additional evidence will be required to show that this mode of communication must be attended with great risk, and its usefulness may be very fairly questioned.

We will now consider the general points of the proposed canal by way of the river St. John, and Lake of Nicaragua, to the port of St. John, on the Pacific. Starting from the Atlantic shore, and taking the valley of the river St. John for our course till we arrive at the Lake of Nicaragua, we have to this point seventy-nine miles of open cutting to perform, with the necessary lockage, to ascend a height of about 130 feet; from the lake to the summit level of the canal we have about seven miles of open cuttings, with the necessary lockage, to ascend a height of about 80 feet; from this distance and gross elevation of 210 feet, a tunnel of about five miles in length (through a hill, the summit of which is 830 feet above the water level of the canal) must follow; the remaining distance, about two miles, would be open cuttings, and lockage down to the Pacific; the gross distance across the Isthmus by this route is little less than 100 miles. The same probable difficulty of obtaining an adequate supply of water to this canal (except by pumping) applies, and perhaps with more force, than in the foregoing case; the cost of the works here would be greater, and it is a district equally subject to earthquakes.

It will be admitted that these general statements show the project of a ship canal across the Isthmus of Darien to be fraught with much difficulty and risk; but these objections do not apply to a road or railway communication from Chagres to Panama, which would probably be obtained in length not exceeding forty-two miles, and over a gross ascent between the two oceans of about 500 feet, and as it would be constructed on the surface (that is without a tunnel) the danger arising from earthquakes is much lessened. This outline, in the absence of accurate surveys, is unavoidably given in very general terms, but as inspection of various documents before the public, will show that in comparing the projects of a ship canal, and road or railway communication across the Isthmus, the roads have the preference. When it is stated that by this route, and using steam navigation across the Atlantic and Pacific Oceans, the passage from England to the colonies of New Zealand, Van Diemen's Land, and to Australia generally, may be reduced from five months to ten weeks, and also that the passage from England to the coast of Chili and Peru would be reduced to thirty-five or forty days, surely the fact of the great importance of this communication (if for England alone) is fully established. But the advantages of a new road or way across the Isthmus will not be confined to England—the whole of Europe and America must have great interest in it. Steam-packets will shortly between England and the Atlantic shore of the Isthmus; steam-boats are already working along the coast of Chili and Peru, and there is little doubt that a complete steam navigation will be effected within a short time from Panama to New Zealand and other British colonies in New South Wales.

It only remains, therefore (to render this route perfect), to construct a road or railway across the neck of land; and to show that every facility would be afforded by the Government of New Granada in the execution of such a work, it need only be stated that Congress have conferred privileges on parties for such purposes, accompanied by a grant of the necessary land and materials (so far as the country will supply them); a large additional area of land as a premium, and the tolls arising from the traffic duly secured for an ample term of years; but it was required that the works should be commenced within three years from the date of these grants; the last of which expired in May, this year, without anything being done. Here then is an opening for enterprise and capital, such as rarely occurs, and one which the writer of this feels assured, from the anxiety he has heard expressed by influential men in this district of America, and also in England, will not remain long unoccupied. The first step is, obviously, to make application to the State of New Granada for power to construct this road, and the next, that full and complete surveys should be had prior to determining on its character and direction. It is earnestly desired that English capital and enterprise should effect this useful, and, as it cannot fail to be, most profitable scheme.

ON SALE, a new 12-horse high-pressure STEAM-ENGINE, with or without boiler.—For price, and other particulars, apply to George Firth, Iron merchant, &c., Upperhead row, Leeds.

MEETINGS OF SCIENTIFIC BODIES.

IN THE ENSUING WEEK.

SOCIETY.	PLACE OF MEETING.	DAY.	HOOR.
Royal Botanical	Regent's-park	Saturday	4 P.M.
Medical	Boil-court, Fleet-street	Monday	8 P.M.
Royal	Somerset House	Tuesday	1 P.M.
Society of Arts	Adelphi	Wednesday	7 1/2 P.M.
Geological	Somerset House	Wednesday	8 1/2 P.M.
Antiquaries	Somerset House	Thursday	8 P.M.
Zoological	57, Pall-mall	Thursday	8 P.M.
Botanical	20, Bedford-street, Cov.-g.	Friday	8 P.M.
Westminster Medical	Exeter Hall	Saturday	8 P.M.
Mathematical	Crispin-street, Spitalfields	Saturday	8 P.M.
Royal Asiatic	14, Grafton-street	Saturday	2 P.M.

PUBLIC COMPANIES.

COMPANY.	PLACE OF MEETING.	DAY.	HOOR.
Peninsular & Oriental S.M. Nav. Co. Ltd.	St. Mary-axe	Nov. 30	7
Northern and Eastern Ry. Co.	London Tavern	Dec. 2	2
Waterloo Bridge Company	Crowe and Anchor Tavern	2	12
Equitable Assurance Company	Office	2	11
Bank of British North America	Office	7	1
Grand Junction Water-Works	Office, Brook-street	9	12
Polgreen Tin and Copper Company	44, Finsbury-square	14	2
Tincroft Mining Company	44, Finsbury-square	23	2
Sark Mining Company	Office, Guernsey	Jan. 20	12

South Australian Company 24. Dec. 1. Glyn and Co.
Bristol and Gloucester Railway 24. Dec. 1. Barnett, Hoare, and Co.
Cambrian Iron and Spelter Co. 24. Dec. 1. London Joint-Stock Bank.
Northern and Eastern Railway 24. Dec. 1. Masterman and Co.
London & Birmingham Railway 10. Jan. 10. As former calls.
Irish Waste Land Im. Society 14. Jan. 15. As former calls.
Irish Waste Land Im. Society 14. Jan. 15. As former calls.

Combmartin & N. Devon Mine 14. per share W. of Eng. & S. Wales. Dec. 24.

NOTICES TO CORRESPONDENTS.

GRANT'S PATENT FUEL.—The patent is the property of Government—its purchase was effected through Mr. M. O'Farrell; we are not aware what sum was obtained for its transfer, or what interest is possessed by the patentee in the extension of the article manufactured under the patent. Mr. Grant has succeeded in one great point—that of convincing Government of the advantages of a prepared fuel; beyond that we do not consider him entitled to any particular merit for the invention, which, by-the-by, we have reason to believe is not original with Mr. Grant. For answers to the other queries, our correspondent must apply at the manufactory, Woolwich Dock-yard, or at Gosport.

However we may regret the differences unhappily existing between our Leeds correspondent, Mr. R. B. Watson, and his late partner, the subject is one of such a peculiarly private nature, that we feel compelled to decline publishing the statement forwarded us; we sincerely hope Mr. Watson may be successful in his endeavour to re-establish himself in business (of which there can be little doubt, from the extensive patronage he appears to enjoy), and shall be happy to receive a continuation of the business like reports which have for some time past, with the exception of the last week or two, regularly appeared in our columns.

WILLIAMS'S PATENT LOCK.—"N." (Birmingham).—We are not aware what steps, or if any, have been taken to wind up the affairs of this company; the opinion we stated was formed on a close examination of a variety of the locks submitted to us, and we now think, as we then expressed, that the locks were the best constructed, and offered an entire prevention to acts of dishonesty that are almost daily committed. The cause of the stoppage of the concern, is, we are informed, threatened proceedings on the part of Mr. Chubb, on an infringement of his patent.

"T. P."—Whatever antipathy we may entertain to, or however strongly we may express our disgust at, the public conduct of the individual alluded to, we have too high a regard for the character of the Journal, to allow of its being made the medium of private recrimination.

"M. F."—The further examination of Mr. Cave was appointed for Wednesday last, but, in consequence of the illness of Sir C. Williams (the commissioner before whom the case was previously heard), it was arranged that it should be adjourned until that day week; should any further particulars transpire we shall, of course, give them publicity.

SALES OF COPPER ORES AT CORNWALL AND SWANSEA TICKETINGS.—From a careful review of the important table in our last, we find that the sales from the Santiago Mines were omitted in the list of sales at Swansea Ticketing, which were, however, included in the aggregate amount. The sales of 1840 were 214 tons, average 167 lbs. 11d., producing 84,604 lbs. 5s.; that of 1841, 6274 tons, average 167 lbs. 11d., producing 1,045,000 lbs. 3s.—showing an increase of 1160 tons, and in money of 15,829 lbs. We have reason to believe there are also one or two errors, the particulars of which we shall ascertain, and endeavour to rectify by their correction in our next.

We have received the letter of a correspondent, detailing certain acts said to be committed by a secretary to one of the companies, who holds more than one office in the city. The matters referred to are of too personal a nature for our columns; we may, however, observe, that "charity covereth a multitude of sins." The party referred to we know has the credit of being a charitable sinner—we hope he is not also a charitable hypocrite.

Several letters on mine surveying are postponed.

ALDERMAN TALACEE WOOD AND HIS VISIT TO THE PALACE.—The communication of "A Voice from Bishopsgate" has been referred to our city correspondent, who, in explanation, states that it was well known the alderman's visit to Buckingham Palace was in no way connected with the birth of a heir to the throne, otherwise than to ascertain, by the dexterous use of his sophisticated cunning, whether, on his appointment as Prince of Wales, a plan could not be adopted whereby the particular locality in which the alderman is so much interested, the "Black Parlour" might not be placed under the youthful prince's especial protection and patronage. Among other proofs of the claims of the barony of Talacee to that distinction, the sample of coal (about which so much has been said) was submitted, that its superior qualities might be tested in the royal nursery; consequently, the visit could not be termed one of congratulation, as our correspondent supposes, but, as stated by us, one of confidence—on the present state of the affairs of the learned alderman and the Talacee Company, while that of congratulation is postponed, until the time arrives when the El Dorado of Llanassa shall receive the distinguished honour of royal patronage. The alderman, we are informed, when "courting" the attention of his "friends at court," eloquently observed:—"This grand national undertaking, which, from the vast superiority and endless quantity of its produce, is to effect an entire revolution in the nature and economy of fuel—which is to be a source of boundless wealth to its fortunate proprietors, and a principal means of averting all the direful and calamitous diseases engendered in crowded neighbourhoods by ill-ventilation and noxious atmospheres!" &c., &c., must be productive of a complete regeneration—not only in the city, but all over the country, and which might be confidently calculated upon his (Alderman Thomas Talacee Wood's) assumption of civic dignity. As a cautious author used to conclude any doubtful prophecy, we say—"Time will show."—We can notice no further communications on the subject.

The proceedings of the Geological Society are unavoidably postponed.
Received—A. T. J. Martin—"A C. M. Mer"—"R. N."—"An Admirer of Railways"—"A Practical Mechanic"—"A Workman."

THE MINING JOURNAL, Railway and Commercial Gazette.

LONDON, NOVEMBER 27, 1841.

It is pleasing to record the progressive advancement in the scientific and mechanical world, arising out of the labours of the numerous institutions which have within the past few years been formed, having for their object the promulgation of knowledge and the acquirement of information on many of the most useful, as well as abstract, sciences. It is only some few years since that the Royal Society, the Geological Society, and the Society of Arts and Sciences were the principal bodies, the attention of which was directed to scientific pursuits; but these form but a small proportion of the institutions which now rank high in public estimation, and whose labours have effected so much real service. The desire for a more extended dissemination of knowledge gave rise to the formation of Mechanics' Institutes, whereby the humbler classes of life are afforded the opportunity of deriving those advantages from which they had been previously debarred—a ready access to works treating on practical science—others combining instruction with amusement—courses of lectures treating on popular subjects—with classes of education, and other useful attainments, only to be acquired under such peculiarly advantageous circumstances as are presented by a Mechanics' Institute; to these are to be added the establishment of other institutions of a higher character, based on those already referred to, and comprehending almost every branch of scientific research, which promise to become of infinite importance to the country, while they afford a means of recreation to the mind—an association with men of eminence and worth, and the means of discussing the merits of discoveries, whether in the field of natural history or of mechanical science. The Institution of Civil Engineers is an apt illustration of the rapid advances made by the formation of these societies, as evidenced by the important papers published in their Transactions (which have appeared from time to time in our columns), and the

value of the communications made by its members. Numbering, as it does, some, if not all, who are pre-eminent for their talent and ability as civil engineers, it would, indeed, be strange were not the papers submitted at their meetings, as well as the discussions arising thereon, held as possessing more than ordinary claims on the attention of the engineering world and the community at large.

We have watched, with much interest, the progress of this institution, and have observed the continued advancement it has made in directing the attention of its members to subjects which extend beyond the mere detail of engineering, although fully embraced in that comprehensive term. It will be seen, by our Journal of this day, that the council have awarded the TELFORD Medal, in silver, to THOMAS SOPWITH, Esq., M.I.C.E., for his paper "On the Construction and Use of Geological Models in Connection with Civil Engineering." In thus combining geology with engineering, we consider the institution has taken the first step to the framing of a code for civil engineers, which we hope one day to see perfected; geology has been considered generally as an abstract science, and not as one intimately associated, as it proves itself to be, with other of equal and not less important sciences. We now find the miner to attach a value to mineralogy, geology, chemistry, and engineering, each being requisite for the attainment of the object to which his attention is directed, while the railway engineer gladly hails geology as a handmaid to that science with which he is more intimately connected, as it is from such accession that he arrives at the knowledge of the various strata on which he may have to operate by tunnelling or cutting, and thus enables him to form an estimate according to the nature of the rock or soil, which, in the absence of such information, it would be impracticable for him to ascertain.

We have too oft witnessed the errors into which men have fallen, who, however well informed as mechanical engineers, have been ignorant of those other sciences so valuable as adjuncts, while we are ready to admit, that the class of engineers of the present day are far more highly educated and enlightened than those of the past; and advantages are afforded to youth to derive instruction from lectures, and attendance at institutions of this nature, which, but a few years back, were unknown. During the past week Mr. VIGNOLLES has delivered his first lecture, "On Civil Engineering," at the London University—we have also classes at the Durham University, and Dublin College; and hence we may expect that the next generation will be as much improved over the present as the present is over the last.

To Dr. CHARLES SCHAFHAUPT also was presented the TELFORD Medal, for his two papers on "A New Universal Photometer," and "On the Circumstances under which the Explosions of Steam-boilers frequently occur"—an abstract of which has already appeared in our columns. The usefulness of papers of this nature, on a subject of the first importance, as affecting the security of life as well as property, appears to have been duly appreciated by the council.

We now proceed to note those subjects in which we feel a more immediate interest, and to which the council invite the attention of its members, from which it will be seen that the objects of the institution are to render it useful in a practical sense, and not to be the mere arena of disputation on technical points or abstruse theories:—

1. The comparative advantages of wire and hempen ropes.
2. The smelting and manufacture of iron, either with hot or cold-blast.
3. The smelting and manufacture of copper.
4. The causes, means of preventing, and methods of determining the amount of priming in steam-boilers.
5. The description of any meter in practical use for accurately registering the quantity of water for supplying steam-boilers, or for other purposes.
6. The explosion of steam-boilers, especially a record of facts and evidence connected with any well-authenticated cases, &c.

It will be seen from the foregoing list, which form but a small portion of the subjects to which attention is invited, that metallurgical operations are not neglected, but are combined with the occupation of the civil engineer—the comparative advantages of wire and hempen ropes being also put forward as a subject deserving of inquiry, with the view of collating accurate data. On this point we are already in possession of much valuable information, a portion of which has already appeared in our columns, and it will be our object to collect such further data as may be accessible, so as to submit the results of our inquiries—an office which will be the more pleasing, if aided by our correspondents, in contributing through the medium of the columns of the MINING JOURNAL, their observations on the duty performed by wire rope—its comparative strength—weight and cost, under varied circumstances, whether as applied to a draught, as on railway, or to drawing by pit or shaft—its flexibility—the sized cage or drum required for specific thickness of rope, &c. As regards the smelting and manufacture of iron with hot or cold-blast, this will, we presume, embrace the process under Mr. CRANE'S patent—that of smelting iron with anthracite by the application of the hot-blast. It will also, doubtless, elicit much valuable information on the comparative quantities of fuel employed by the several processes of hot and cold-blast—the quantities made from furnaces of a like construction, and the yield from the raw material—as also the quality of the iron when manufactured. The smelting and manufacture of copper, we need hardly say, is open to many improvements, for by the present mode of operation it is most costly, fifteen to twenty tons of coal being used in the manufacture of a ton of cake copper, and the ore, in most instances, being required to be mixed so as to yield an average of 9 to 10 per cent., it being found impracticable to deal with the rich ores without an admixture of the poorer ones, as is the case in the manufacture of iron.

At the late meeting of the shareholders of the British Iron Company, it will be remembered that, in consequence of a division in the room being found impracticable, with a due regard to the interest of the shareholders, whether "united" or otherwise, as developing the opinions entertained by the general body on the subjects then submitted, it was resolved on taking the opinion of the proprietors by ballot—and accordingly the ballot was fixed for the 25th inst. This course was highly commendable on the part of the directors, as affording the best evidence of their desire that all should be "fair and above board," and that the interests of the many should not be sacrificed to any clique or party, while it precluded all danger to be apprehended from a packed meeting, or the voice of a holder of five shares having undue weight in the absence of holders of thousands.

The ballot took place accordingly, and the result is the best reply—and, indeed, the only answer which it is necessary for the board of directors hereafter to give to the attacks of their assailants. On the amendment, having for its object a delay taking place in the disposal of the works and property of the company, from the depressed state of the iron trade, and expressive of the opinion that the works should be maintained in an efficient state, the votes were in favour of such amendment 1662, equal to 8310 shares; against it 6 votes, equal to 30 shares. On the resolution moved by Major RICHARDSON, that it was inexpedient to take further legal proceedings for the recovery of calls, until those instituted were brought to issue, the votes in favour were 11, equal to 55 shares; against it 1637, or equal to 8285 shares.

This result must be highly gratifying to the directors, who well deserve the support of the proprietors, for the bold and independent stand they have taken, and for the candour displayed throughout the late inquiry.

MR. VIGNOLLES'S LECTURES ON CIVIL ENGINEERING.

On Wednesday, the 25th inst., Mr. Vignolles delivered his first lecture on civil engineering, at University College. In his introductory lecture, on the 17th inst., he pointed out to the students the importance of civil engineering, now that all the great undertakings of the country were based upon the application of new theories, and dependant for success upon the practical knowledge of its professors; he then commented on the various branches into which engineering may be divided—viz., civil, mechanical, mining, military, and naval. As to the means of qualification for these several pursuits there were abundant facilities, for London abounded with institutions for those who desired to embrace these particular pursuits, and the press daily sent forth the results of the experience of the most eminent practical men. Smeaton, Telford, Rennie, Tredgold, and many others had published works that would be found invaluable to the student. He then remarked upon the various important inventions which had been made known, and more particularly to the one of Mr. C. W. Williams, for the prevention of smoke—that being an invention, in the opinion of the lecturer, likely to confer most important benefits upon society. Upon railways he made some most judicious remarks, expressing his opinion that, notwithstanding the checks they had received from bad management, they must ultimately triumph, and prove profitable speculations.

On the present occasion, after offering some judicious comments on engineering generally, the lecturer alluded in particular to that important portion where the skill of the engineer was most required—viz., foundations. After some instructive remarks upon the subject, he said that for the foundation of bridges a network of timber had been used, and was found to be very good so long as it was under water; but if it were liable to become dry, and exposed to the effects of the atmosphere, it was sure to fail. He recommended concrete as far superior to timber; he had seen concrete forced into a quicksand, and no weight could afterwards force it out. Brick earth and clay form excellent foundations—the whole of St. Paul's, except the north-east corner, was built upon such a foundation, of from four to five feet thick; at the north-east corner, the architect being afraid to trust to the ground, it being rather softer than the other parts, had the clay removed, and a well of from twenty to thirty feet square sunk to a depth of about forty feet, where the hard bed was found; he then raised a solid mass of masonry to within nine or ten feet of the surface—arches were turned, and the foundation finished at an enormous expense; whereas, a few cubic yards of concrete would have answered equally well, if not better. All must have noticed the hole that was filled up in laying the concrete foundation of the Royal Exchange; there a few cubic yards of concrete did the work more expeditiously, and as well as the ingenuity of the mason could have effected it; he alluded to some of the most remarkable instances of the prodigality of architects in laying foundations, as the Barrière de l'Etoile (a triumphal arch at Paris), where the cost of the foundation far exceeded the amount of surface work; and the viaduct of the Valley Floré, in which a mass of solid masonry, thirty feet thick, was erected, extending all across the valley. In these cases concrete would have answered the purpose equally well, and at an enormous reduction in expense. Mr. Vignolles stated that the leading principles he wished to impress upon the minds of the students were—extension of base and equality of surface. He then, at some length, explained the different foundations that had been used for bridge building, and mentioned particularly Ranger's patent for curing defects where foundations have given way—viz., by using hot water to concrete applied in boxes, the hot water causing the concrete to expand. This was applied to the foundation of the Custom House when it had given way in consequence of a failure in the piling, which rendered necessary the application of an artificial for a natural foundation. He then remarked upon the various methods now in vogue for keeping the piles of bridges dry while under repair, alluding to caissons, and Tierney and Clark's method of putting in the foundation of the landing-place at Gravesend by portable cofferdams. The Professor concluded his instructive lecture, stating his wish to popularise the knowledge of engineering as a means of benefitting the public at large.

INSTITUTION OF CIVIL ENGINEERS.

The council have awarded Telford medals in silver to Thomas Sopwith, M. Inst. C. E., for his paper upon "The construction and use of Geological Models in connection with Civil Engineering;" to Dr. Charles Schafhaeuti, for his two papers on "A New Universal Photometer," of his invention, and "On the circumstances under which the Explosions of Steam-Boilers frequently occur"—all of which have appeared in our columns.

The council invite communications on the following subjects for Telford and Walker premiums:—The comparative advantages of wire and hempen ropes; the ascertained effects of any method for preserving timber from decay; the smelting and manufacture of iron, either with hot or cold-blast; the smelting and manufacture of copper; the causes, means of preventing, and methods of determining the amount of priming in steam-boilers; the description of any meter in practical use for accurately registering the quantity of water for supplying steam-boilers, or for other purposes; the explosions of steam-boilers, especially a record of facts and evidence connected with any well-authenticated cases; also a description, drawings, and details of the boilers, both before and after the explosion.

LONDON ELECTRICAL SOCIETY.

At a meeting of this society, on Tuesday, the 16th inst., the communications read during the evening were—1st, "An Experimental Inquiry into the Nature of Ozone." By Mr. Gann.—Though the writer has not given us any idea as to the nature of this peculiar odour, yet he furnishes some interesting facts relative to the conditions of its development. For instance, when the voltaic spark is frequently passed between silver, iron, copper, and platinum terminals, enclosed in jars of air, or the gases, the odour is produced, but not when zinc or carbon terminals are used; in all instances zinc may be the kathode, providing the anode be one of those metals named. The author thinks that all metals will produce it, but has not yet furnished a series of facts in confirmation of his idea; platinum alone produced it in electrolysis; and many interesting facts arise from the explosion of odorous gases, into which we have not space to enter.—2d, "On the Tendency of Electricity to Promote the Growth of Plants." By Mr. Pine.—This was chiefly shown to be the case when the soil is negative compared with the air. A narcissus in a positive atmosphere, and mustard-seed in a negative soil, were very luxuriant.—3d, "On the Powers of a Water Battery." By H. M. Nond, Esq., Mem. Elec. Soc.—In addition to the facts communicated at the last meeting of the society, Mr. Nond states that he obtains a perpetual vibration by suspending a pith-ball between two discs in connection with the respective terminals of his series of 500 pairs.—4th, "Note upon a Phenomenon presented by Solution of Nitrate of Silver, decomposed by the Current." By M. C. Matteucci (translated by the secretary).—This paper will be interesting to those engaged in electrolysis, as it furnishes some definite information with respect to what has been termed the dark deposit.—5th, Mr. Weekes's "Register" for October was then laid before the society.

LITERARY NOTICES.

Transactions of the Manchester Geological Society.

The first volume of papers read at the Geological Society of Manchester has just been published, by order of the council, and contains a long list of treatises on highly important subjects, most of which, however, have already appeared in our columns in the course of our usual notices of the proceedings of scientific societies at the regular meetings; the interesting nature of the contents of the volume (as shown in an advertisement in another column) affords sufficient proof of the high standing and vast utility of this society, in the success of which, we need hardly say, we feel deeply interested, situated, as it is, in a locality possessing features of unusual interest to the miner and geologist, and cannot fail, from the nature of the facts and incidents constantly brought under the notice of the members, to afford a constant supply of valuable matter, of which we shall always gladly avail ourselves, for the purpose of enriching our columns, and at the same time affording the best evidence of the progress of the institution.

Glasgow Practical Mechanic and Engineer's Magazine.

We have received the second Number of this new Mechanics' Magazine, which fully confirms the favourable opinion we expressed on its commencement, and establishes it as decidedly the first of that class of periodicals, whether as respects the quantity or quality of its contents (the latter being of a very superior character), produced out of London. The work is altogether one of great utility, and for the production of which much credit is due to the spirited proprietors. It is calculated to confer great benefits on more than mere mechanics, to whom it is ostensibly addressed, for the dissemination of really useful matter at a remarkably cheap rate, and we think cannot fail receiving extensive patronage, to which it possesses strong claims. We heartily wish it success.

THAMES TUNNEL.—A thoroughfare was effected in this work on Tuesday last, and made use of for the first time, by the whole of the directors and some of the original subscribers, who had assembled upon the occasion. The shield will continue its advances until it has afforded space for the formation of the remainder of the tunnel, which is expected to be completed in about three weeks hence.

ARTESIAN WELL AT CALAIS.—The Municipal Council of Calais has entered into a contract with M. Mulot, the engineer, of Grenelle, to bore an Artesian well within the town; the terms are, that the experiment is to be made to the depth of 200 metres (656 English feet), for which, if water be found in sufficient force to rise one metre above the surface and give 720 hectolitres (15,840 gallons) in twenty-four hours, M. Mulot is to receive 24,000fr.; but if this result is not produced, only 14,000fr.

ORIGINAL CORRESPONDENCE.

ON THE CHEMICAL COMBUSTION OF COAL.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—With reference to the correspondence between Mr. U. Thompson and Mr. Charles Hood, in your late Numbers, on the above subject, as my treatise *On the Combustion of Coal* has been quoted by the former gentleman, I beg to observe that the calculations, as to the heat-giving properties of the hydrogen and carbon in bituminous coal, are not given correctly, or, as stated in my work, apparently from an oversight of Mr. Thompson. That gentleman observes—"Let us take up the analysis of Dr. Thompson, and compare carefully the weight of atoms on which Mr. Hood would hinge his chief argument. We are thus informed by the Doctor, that seventy-five of carbon, and only four of hydrogen, are found in the caking coal," &c. "Then we shall have seventy-four demanding two atoms of oxygen, and four demanding one each of oxygen, which will thus stand:— $74 \times 2 = 148$, and for the hydrogen $4 \times 1 = 4$ —together 152; and for the carbon in the coke $2 \times 100 = 200$ —making a difference of nearly fifty atoms in favour of coke."

I am sorry to have to observe that this is quite erroneous. Mr. Thompson's error appearing to have originated in his estimating the oxygen required according to the number of its atoms, instead of their weights. The calculation then should have stood thus:—

Carbon	$74 \times 2.5 = 192.4$
Hydrogen	$4 \times 8 = 32.0$
	224.4

because each atom (or pound weight) of carbon requires 2.66 times its weight of oxygen to effect its combustion; whereas every atom (or pound weight) of hydrogen requires eight times its weight of oxygen. Comparing the above with 100 lbs. of coke, the result would be— $100 \times 2.66 = 266$.

But let us take coal according to the analysis of Mr. Richardson, which is admitted to be the most correct. Newcastle caking coal, then, contains—of carbon 87.952, hydrogen 5.239, oxygen and azote 5.416, and of ashes 1.393—making together 100.

Now let us estimate the heat-giving properties of the combustible constituents, as above, by the weight of oxygen with which they respectively combine in combustion—viz.:

Carbon	$87.9 \text{ lbs.} \times 2.6 \text{ lbs. oxygen} = 228.54$
Hydrogen	$5.2 \text{ lbs.} \times 8.0 \text{ lbs. } = 41.60$
	270.14

Compare this with 100 lbs. of carbon, either in coke or anthracite, and we have 100 lbs. of carbon $\times 2.6 \text{ lbs. of oxygen} = 260$, which leaves 10.14 in favour of the coal, instead of 50 in favour of coke. In other words, 100 lbs. of Newcastle coal will combine with 270.14 lbs. of oxygen, and give out heat in that proportion; whereas 100 lbs. of coke can only combine with 260 lbs., proving the superior heating properties of bituminous coal over coke.

I would here observe, that so much has lately been said in favour of the use of coke and anthracite, that their advocates have fairly run away with the subject. The chemistry of combustion, however, being nothing more than the enunciation of Nature's processes, cannot be so disposed of. Why we have not, in practice, obtained the full amount of heating capabilities from bituminous coal, is another subject, and this I will explain on a future occasion. I do not here enter into the other parts of the dispute between these two gentlemen. Mr. Hood's paper is full of chemical errors, still, on the present occasion, his chemical details are more correct than those of Mr. Thompson.

C. W. WILLIAMS.

Liverpool, Nov. 23.

[The discussion of this question is one highly interesting and important, and we doubt not that the results will be equally satisfactory. We court the further correspondence of Mr. C. Hood and Mr. U. Thompson on the subject.]

ON THE SEPARATION OF COPPER ORES FROM BLACK-JACK.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Having been informed that there has been a method discovered lately for separating copper ores from black-jack, with which it is often mixed up, some gentlemen in Manchester. I apprehend, have taken out, or are about to take, a patent for it. Such a mixture of minerals has hitherto, I believe, had a very limited sale. The mineral cycled (by miners) black-jack was so designated, perhaps, from its colour. Whether it is a term by which it is generally known I am not mineralogist sufficient to determine. However vulgar the appellation may be, I doubt not but that some of your general readers will understand what I mean, and will therefore, I hope, be kind enough to set me right on that head. I can assure persons interested in the business that there is to be had in Cornwall a great deal of such minerals, provided the company (if such there be) can afford to give a tolerable remunerating price for it. Should they purchase largely, they will, no doubt, be a means of employing a great many hands in the county who are wanting work. That, Mr. Editor, would surely be highly gratifying to your patriotic spirit—various instances, I think, might be produced wherein you have anxiously endeavoured to elevate the condition of the miner; much more so, indeed (to their shame be it spoken), than those who appear to be much more deeply interested in the business. Now, Sir, I should be glad to be informed through the medium of your paper, whether you or any of your intelligent correspondents know of such a company being formed? I should feel obliged, also, to be informed for what purpose pure jack has, or is now being used?

SAUL PININ.

Hewal Suby, Nov. 24.

[In reply to our correspondent, as to what is "black jack," and what the purposes to which it is applied, we have to inform him, that "black jack" is the "nickname" for blende, or sulphuret of zinc; it is, we are aware, found in considerable quantities, more especially in the backs of lodes, and occasionally mixed with copper pyrites—iron and sulphur invariably forming component parts. Where mixed with copper, in quantity of the latter too insignificant to be treated by the copper smelter, it has been thrown aside as valueless, the smelter or manufacturer of zinc discarding this description of ore, from the destructive properties of the copper to the vessels in which the metallic zinc is reduced, as well as the extra cost attendant the reduction process. We are not aware of any company having been projected in Manchester or elsewhere, for the separation of the sulphuret of copper from that of zinc, contained in "black jack" or blende, but shall be glad to receive information on the subject from one or other of our correspondents. We presume that zinc being a volatile body, while copper is a fixed metal, the mode adopted (assuming that such process exists, of separating the one from the other) would also apply to the sulphur ores of Wieklow, and other districts wherein a trace of copper is found—say 1 to 1½ per cent.—too poor for the copper smelter, but which, if it could be separated or obtained from the refuse, after extracting the sulphur, would add much to the value of this description of ores. As the subject of zinc has already been frequently treated upon in our columns, we doubt not but that our correspondent will meet with more full and perfect information on the subject of his inquiries.]

MINERAL TREASURES OF SOUTH AUSTRALIA.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—You will, doubtless, have observed the unceasing efforts which are made by some of the British journalists to prejudice the public mind against the province of South Australia. Now, it is not my present intention to trouble you with any general remarks on the absurd misrepresentations which are frequently had recourse to in England, for the purpose of decrying this highly-favoured colony, because I know that the discussion of such matters would be wisely excluded from the columns of your scientific Journal. The agricultural and pastoral resources of the place will soon be sufficiently developed to yield a rich surplus of value for exportation, and those who now deny the fertility of our soil will then be constrained to hold their peace.

But, meanwhile, presuming you will be glad to learn somewhat of our mineral treasures, and acting under a conviction that "one fact is worth a dozen opinions," I forward, per *Cygnus*, a small box of silver-lead ore from Wheel Gawler Mine, South Australia. Having the sample before you, it would be needless for me to speak of its richness or commercial value, because you are much better qualified to judge of its worth than I am; it may, however, be interesting to you, and satisfactory to some of your readers, to be assured by a resident on the spot that there is a vast abundance of this galena within three or four miles of the city of Adelaide, and that the facilities presented by the geological features of the district are peculiarly favourable for mining operations.

J. C. DIXON.

North Terrace, Adelaide, April 26.

[We have received the specimens referred to by our correspondent, which appear to be rich in quality, carrying with the galena a small quantity of calamine (for we have not yet had them analysed), and to be the produce of a strong vein. We gladly avail ourselves of the communication of our corre-

spondent, in whom we recognise an Irish acquaintance of some years past, and shall feel obliged to him, as well as to other residents in South Australia, for any information treating on the mineral resources of the colony, or the geological features it presents.]

CHANGES PRODUCED BY ELECTRIC ACTION ON MINERALS.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—Mr. R. W. Fox still avoids the discussion of his theory, and is equally silent as to my statement—that he had read the account of M. Becquerel's experiments before the publication of his own. Mr. R. W. Fox states that his ingredients were different from M. Becquerel's, and that the results were obtained at the opposite pole. The difference in the ingredients is, however, insufficient to found any claim to originality, and Mr. R. W. Fox must know that in some of M. Becquerel's experiments the deposits were at one pole, whilst in others, with other substances, they were at the opposite. This attempt to disguise the resemblance between M. Becquerel's experiments and his own, will, therefore, serve him no more now than his four years' silence has already done. It is rather odd to find Mr. R. W. Fox so desirous that M. Becquerel should be quoted accurately, and at length, and, at the same time, trying to evade the charge of having borrowed from him without acknowledgment. As I had so long ago quoted the experiments of M. Becquerel in sufficient detail, and had also corrected my inadvertent error in repeating it, I had covered the whole ground he has attempted to take before the appearance of his first letter. It will be time enough to discuss Mr. Hunt's experiments when we are acquainted with them. Mr. R. W. Fox is welcome to any pleasure he may derive from this discussion; it seems he is satisfied with its result—so am I.

W. J. HENWOOD.

4, Clarence-street, Penzance, Nov. 22.

ON SMELTING IRON WITH ANTHRACITE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—In a letter you kindly inserted in the Journal, two months ago, I spoke of the probable advantage that may arise from the use of anthracite to those foreign mines where iron ore abundantly exists, but where coal is scarce, or of inferior quality. In consequence of these observations, I have received communications from France, and, subsequently, I believe that stone coal has been shipped, for smelting purposes, from different parts in Wales.

From the perusal of a clever and amusing letter in your last week's paper, signed "Scrutator," I have been induced to make the above statement, simply to endeavour to prove to him, that giving publicity to the merits of the mineral in question, is to advance its probable sale and its future interests, for it is, as yet, too partially known to meet with that extensive consumption which ultimately must take place. The claim on public attention—due to the district containing this fuel—is, or ought to be, great indeed, when we consider the vast area under which it lies, and the number and thickness of the beds; also with the knowledge that Welsh anthracite possesses the elements of combustion in a remarkable and high degree, we ought surely to reflect that this great mineral wealth was not deposited within the reach of man without an important and useful purpose being intended, not only to the district where it is found, but to all countries where a concentrated fuel is an object, and one that will bear the rough of frequent change in the mode of carriage—as, for instance, from sea-going vessels into canal boats, and, perhaps, again into railway waggons, according as it may be borne to countries possessing such useful modes of transit. It cannot, then, excite surprise—neither should it occasion reprehension—that so rich a mineral deposit should be made manifest, not only to the coal consumers of Great Britain, but to the whole of Europe.

"Scrutator" expresses alarm as to "some faint attempts now being made to revive the anthracite humbug;" by this, I presume that he alludes to the Anthracite Association. Now, as I never had the honour of being in any way connected with that body, I think I may be allowed to say a few words in favour of stone coal, without fear of being charged with partisanship, or of advocacy of any individual or particular locality. With regard to the attack on Mr. Thompson I have nothing to do, more than to say, that I agree with "Scrutator," that he cannot be left in abler hands than those of Mr. Charles Hood." Mr. Thompson will most likely defend himself—in the meanwhile, I respectfully solicit permission to defend stone coal, and, as far as in my power lies, to explain some of its uses. One of these will unquestionably be for engine purposes; as yet the attempts to generate steam with stone coal have not had fair play, in consequence of the shape of the boilers being unsuitable; nevertheless, from what I have witnessed, I feel satisfied that it will, by-and-by, be economically used for this—above all others—most useful purpose. I have had much to do with collieries where this fuel is used for the engines, and can safely say, I have never experienced any difficulty with it—only, it is fair to repeat, that a boiler, whose formation is suitable to stone coal, has not yet been achieved.

The views and opinions adopted by C. Wye Williams, Esq., on the combustion of coal, will, I am inclined to think, ultimately revolutionise the present mode of constructing boiler-furnaces—and, even from this, I gather encouragement for stone coal. I entertain a strong opinion, that, if a large proportion of this fuel be used in conjunction with a moderate allowance of bituminous matter, the advantages that will arise from the new mode of raising steam will be participated in to a great extent by the proprietors of stone coal property, as the latter fuel can be made extensively available under Mr. Williams's singularly ingenious plan of saving all the products of combustion.

Another legitimate use to which anthracite can be applied, is to the reduction of iron ores, because, for such purpose, it possesses the element which, of all others, is of paramount importance in the manufacture of pig; therefore, I again take the liberty of strongly recommending it to the notice of foreign iron masters, and my reasons for so doing are as follow:—1. That where their native coal is not highly charged with carbon, from 5 to 10 per cent. of anthracite may be used without the aid of hot-blast, and the furnace will work well with it, and the iron be much improved in quality, with but trifling (if any) addition to its cost.

2. That in a furnace properly constructed for the purpose, I believe that even so far as 20 per cent. may be used with cold air; indeed, there is a probability that a fourth of the entire fuel may be composed of stone coal without the aid of hot-blast; and, as a matter of course, the iron will be improved in quality to that extent. It may not here be amiss to state the following hypothesis; at any rate, it has lately struck me as being worth notice—it is, that where a very bituminous coal exists, free from sulphur, and by using it raw, or uncoked, it is a question whether it may not enable the ironmaster to work his furnace with a full half of stone coal, mixed with such highly bituminous raw coal, as above-described, and still avoid the expenses attending hot-blast; it is fair to observe, that, under such circumstances, much would depend on the form of furnace, the adaptation of blast, and the quality of the anthracite so selected.

3. That with, and by, the assistance of hot-air, any quantity of stone coal may be used, either a part or the whole; and it will be unnecessary to repeat, that there is, perhaps, no description of iron ore—properly so called—that it will not reduce and bring into the state of saleable pig-iron. These facts being known, and the cost of delivery being also ascertained, the foreign ironmaster who may possess but an indifferent fuel, can calculate, to a fraction, how far he may benefit by the introduction of a coal that, most unquestionably, will improve his manufacture, as regards quality; and as the quantity or make will be increased in proportion to the quantity of anthracite he smelts with, so can he ascertain his ultimate profit or advantage.

LIONEL BROUGH.

Nenth, Glamorganshire, Nov. 23.

[It is gratifying to find that anthracite, or stone coal, is attracting the attention of our continental neighbours—America having already adopted its use in the manufacture of iron under Mr. Crane's patent. Mr. Brough, however, applies his observations to the use of anthracite from the South Wales basin, while America is independent, having its own resources. We trust, the subject having been resumed in our columns, the agitation of which is acknowledged to have effected already so much good, that other correspondents, practically acquainted with the merits of this description of fuel, will contribute the results of their inquiries, and enable us to do that by discussion, through the medium of the *Mining Journal*, which, in defence, or some latent motive, possibly affecting private interests, precluded the labours (!) of the South Wales Anthracite Association from accomplishing. We recommend the subject to our very able and intelligent correspondent, Mr. C. W. Williams, as one deserving his attention, and who, from his practical experience, may be enabled to lend a helping hand to the proprietors of stone coal (who, by-the-by, deserve it not, for they will not help themselves), but more especially to the development of the resources of the South Wales coal-field, and thus give the means of employment to thousands, while it enriches the country, by the application of a fuel which has hitherto been deemed comparatively valueless.]

IMPROVEMENT IN THE CONSTRUCTION OF RAILWAYS.

TO THE COMMITTEE OF THE DEVON AND CORNWALL RAILWAY.
GENTLEMEN,—I have the honour to inform you, that I have a plan for constructing railways without deep cuttings, embankments, and tunnels, on which no accident can happen, while the expense, exclusively of the cost of land, which would be trifling, would not exceed 11,000*l.* per mile in any part of the country. The plan has been seen, and, I believe I may add, approved, by scientific personages, and I should hesitate not, if you desire it, to submit it, formally, to Professor Barlow, Sir Frederick Smith, Drs. Birkbeck and Jamieson, and Bryan Donkin, Esq., for their report. I beg further to state, that I can also submit a plan for steam-vessels, which would insure to any port enjoying the exclusive right of their use the passenger trade to all parts for which such port is convenient.

I beg to subscribe myself, &c., &c.,

London, Nov. 24.

THOMAS PARKIN, C.E.

Patentee for the wooden and iron safety railway wheels, the inclined blocks for wooden pavement, bridges, &c.

CATA BRANCA MINING COMPANY.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—It is two years since the directors of this company thought proper to call a meeting, or communicate to the proprietors the state of the finances. Such conduct is improper, and is placing the proprietors in an unjust position, for while the directors know everything of the accounts and prospects of the company, the proprietors cannot tell whether their shares are worth 5*l.* or 15*l.*, or whether, in fact, they may expect a call or a dividend. True, your valued paper contains partial reports from the mine, but, then, how are we to judge of the expenses, and whether another "investment in shares," or otherwise, has not been made, with any surplus there possibly may be over the expenses.

While on the matter of accounts, can you inform me why the directors give no general detail of the expenses? In the last report they say—"Supplies to the mine, outfits, passages, salaries, wages, and general expenses 27,188*l.* 2*s.* 6*d.*," or, rather, "expenses 27,188*l.* 2*s.* 6*d.*," for all that could be put under that head. This is short indeed; but do they suppose that the proprietors would not like the accounts to be arranged, that they might see what was "outlay, investment, wages or charges of working the mine, salaries, office expenses," &c.? I believe that the directors are above anything derogatory to their character—that, in fact, no Alderman is among them—still I insist they are inflicting a punishment on their proprietors, and, as we have an expensive establishment, nothing like incapacity should appear. Hoping they may still announce a meeting to be held in the present year,

I am, &c.,

A CATA BRANCA.

[We are at a loss for an answer to our correspondent, as to the way and wherefore that the directors have not convened a meeting of the proprietors, for we must conclude, in the absence of the prospectus to which to refer, that a clause was introduced, providing for general meetings of proprietors, either half-yearly or annually; in which case we doubt not but that the directors will strictly observe the provision so made. Should such have been omitted in the prospectus of the company, and assuming that no Deed of Settlement has been executed, whereby its affairs and proceedings are regulated, and in which provision would naturally be made for periodical meetings of the proprietors, we then feel it to be the duty of the directors to call the proprietors together, and submit to them a report on the affairs of the company; indeed, we think these meetings should be once in every half-year. As to the item of 27,188*l.* 2*s.* 6*d.* for supplies, &c., we do not forget *Chenier Aristides Franklin Murray*, the first commissioner, whose "supplies" would have cut a curious figure in the accounts if dissected. These sums are too large to be "lumped," but, we doubt not, every information as to the items of which they are composed would be afforded, on application at the office by Mr. March, the secretary, who we have ever found obliging in replying to questions put, or affording information which, strictly speaking, in his official capacity, he might have felt warranted in refusing.]

COMPARATIVE VALUE OF CARBONACEOUS FUEL—SMOKE NUISANCE.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I am glad to see the subject of heat and combustion occupying such a prominent position amongst the other interesting matter which weekly crowds the columns of your valuable paper. Heat and combustion scientifically inquired into must lead to an accurate knowledge of the true value of the various substances used as fuel, and the best method of applying them. The most indifferent observer of passing events must become sensible of the vast importance of the subject, connected as it is with the extension of steam navigation, when he reflects for a moment that the United Kingdom is at this time waging war with the most populous empire in the world, and situated at the most extreme point to which her fleets can be sent. It is chiefly by the use of such inventions as steam-vessels that a handful of British troops and seamen are enabled to bid defiance to the hundreds of millions opposed to them—the use of steamers, too, enabling the expedition to keep up a certain and regular communication with the Government at home and its dependencies in the East Indies. The subject is important in another point of view, as having a tendency to abate the nuisance of smoke. Some parties may be inclined to regard this as of very little importance; but if they were confined to the locality where I am sometimes domiciled—viz., in the immediate neighbourhood of London-bridge—they would, I am sure, think differently. When I see such a host of eminent names as appear from time to time in the columns of the Journal, affixed to treatises and speculations upon these subjects, I am encouraged in the anticipation, that a consummation so devoutly to be wished will at no distant period be realised. I trust the importance of the subject will excuse the freedom taken by an obscure individual in offering a few cursory remarks. Much controversy appears to exist as to the comparative value of carbonaceous fuel, such as coke or anthracite coal, and bituminous or free burning coal. In my opinion much depends upon the circumstances attending the use of the fuel. Where a high temperature is required to act in a confined space, carbonaceous fuel will be found most effective; it produces a higher temperature, and the heat is more fixed or stationary than that of fuel containing gas, all gases having a tendency to radiate heat. Carbonaceous fuel may answer for high pressure engines with small boilers, because it acts with great energy upon bodies in immediate contact, or very near proximity; but in marine engines a large quantity of steam is required at a low pressure, consequently a great bulk of water must be kept boiling moderately. To effect this a moderate heat should be kept acting through a great extent of flues, which is attained by generating in the fire-place a supply of volatile inflammable matter, which escaping in a state of ignition, acts upon the flues in its passage from the fire to the funnel. When there is a deficiency of temperature or of oxygen (both of which must occur whenever too large a quantity of fresh coal is thrown upon the fire), much of the volatile matter escapes unconsumed, causing the nuisance of smoke, and the waste of so much fuel. There seems to be much diversity of opinion amongst learned men about the actual composition of coal gas, and its value in fuel. It may, however, be gathered from their controversies, that gas is essentially composed of hydrogen, oxygen, and carbon; that it acts as a radiator of heat, transferring much of it from the fire itself to the flues of the boiler. The vapour of water is a powerful radiator of heat; and I read some time since in the Journal, with much satisfaction, the suggestions of a correspondent for applying the vapour of water to an anthracite fire, with the view of giving to it some of the effect of bituminous coal, by which we should at once attain the total prevention of smoke, with the use of what your correspondent termed a species of concentrated fuel, combining the greatest attainable economy of fuel. I hope to see this subject further discussed—it appears to me practicable, and most important in its results.

HYDRO-OXYGEN.

London, Nov. 22.

[We entertain no doubt but that the question propounded with reference to the application of anthracite more generally will be successfully solved ere long. There is much to be done in overcoming prejudice, and further in the proper construction of furnace, as well as the attention required with a new fuel on the part of the stoker. We do not, however, for one moment apprehend but that anthracite will "ride the waves," and be exclusively used for steam navigation at the same time that it progresses with stationary and locomotive engines.]

ON MINE SURVEYING.

TO THE EDITOR OF THE MINING JOURNAL.

SIR,—I sincerely congratulate you on the satisfaction you must feel at finding this momentous subject so zealously followed up in the Journal by men of talent and experience. I hope and believe that the impulse which it has received will not quickly subside, for notwithstanding the opinion of a few, we are assured the subject is inexhaustible. We trust the Journal will continue to be adorned with problems and solutions adapted to every case; but while the high, peculiar, and abstruse questions receive

[We are well pleased to find the interest increasing on the subject of our correspondent's letter, to whom the merit is due of directing attention by "agitating" the question in the first instance, and perseveringly prosecuting the object in view by repeated communications, until it has assumed one of interest, and promises to be attended with the expectedly beneficial results. Practical questions on other branches of science, connected with mining operations, might, we think, be canvassed with equal advantage through our columns, to which we shall at all times readily afford space.]

P.S.—In my last, "is the *section* of triangle," should read is the *secant* of the triangle; and "D O is the *sum* of angle required," is the *sine* of the angle required.

Again, the triangle A B C being given, its angles are all given, and the $\angle B A I$ being also given, equal N. $7\frac{1}{2}$ deg. W.; from these everything required is easily and readily deduced, and the magnetic directions of all

P.S.—The problem proposed in the same paper, by Mr. Knox, is solvable, mathematically, by the "Formula" he has proposed and investigated; but there being nine coal seams mentioned, none of which seem to be given in position, and to all of which he requires the surface to be correctly transferred, I apprehend that a more easy and ready method may be used, to do the thing practically, and of which he himself seems very competent both to devise and explain.

The following example and solution of a single problem in mine surveying, may probably induce some of my "flannel shirted" brethren to study, and make further inquiry into the subject of trigonometrical surveying, which I assert requires no profound mathematician to understand, or to be able to cope with those who say it does.

EXAMPLE.—Suppose line AB in the following figure to represent a draft or course, bearing N. 35 deg. 30 min. E., length of course 80.—Required the distance north, and also the distance east, the end B is from A ?

First draw any line, A C, to represent the north, then with a pair of compasses extended on a scale (divided into equal parts) to sixty of those parts, put one foot of compass on A, and describe an arc *a b*; then, from same scale of parts as before, take 35½ parts in your compass, which lay off in the before-mentioned arc, through this mark then draw the line A B equal

to 80, the length of the course. Now, with the compasses extended as before to 60 parts, put one foot on B, and describe the arc $c d$; then take $54\frac{1}{2}$ parts on the compasses (the complement of angle A), mark off this on said arc, and on a line with said mark the side B D is drawn, till it touch the first made line A C; side A D will be the distance the draft is north, and side D B the distance east—both of which may be learned by the application of compasses and scale.

TRIGONOMETRICAL SOLUTION.—If in the above figure we make the side A B radius, the question will be solved thus :—As radius 90 is to side A B 80, so is sine angle A to side D B; and again, as radius 90 is to side B B, so is sine angle B to side A D. I find, on looking into table of logarithms, that logarithm for side A B 80 is equal to 1.90309 and by looking into table of artificial sines, that sine angle $35^{\circ} 30'$ is 9 76395

Radius 90	10-00000
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By table, natural number for log. 1.66704 is 46, side D B....	1.66704
Again, for side A B—say logarithm for side A B 80	1.90309
Sine $\angle B$ 54° 30' is	9.91069

Sine Z B $54^{\circ} 30'$, is.....	9.91069
	<hr/>
	11-81378
Radius 90	10.00000

By table, natural number of 1°13'37" is 66, side A D 1°13'37"
 Shaft, or course A B, is therefore N. 66, and E. 46—answer required.

If we suppose the line A B in the foregoing figure to represent a diagonal shaft, or other incline, in coal or metallic mine, it will be seen that the solving of the above problem answers the question as to the horizontal distance top of incline of A is from end of B, as also the perpendicular depth of pit required from horizontal of A to bottom of B.

It is more than twenty years, Mr. Editor, since last I looked into a logarithm table; at that time my labour was a pleasure, and my education (such as it is) an amusement, and after the day's work would merrily doff the flannel shirt for a linen one with a starched collar, and be off to the village school (where some of your critics may say I would want to go again), but, alas! alas! the elastic step and light heart are now both gone from me!

Nov. 13. Your humble servant,
A. WOREMAN

P.S.—It is with a carpenter's foot-rule and a blacksmith's compasses that I have constructed the above geometrical figure, therefore hope I shall be pardoned for my unwieldy scale of cords, having no other to use.

Sir,—The "Coal Miner's" remarks in regard to the solution of my problem is correct—it ought to be the *tangent*, and not the *sine*, of the angle of depression. For his resolution of the queries concerning my model I thank him, but, as I intend to send you a description of the model, and the plan I adopted in constructing it, as soon as I have a day's leisure. I shall make no further remarks on that subject at present.

PROBLEM.—Having sunk a pit to the coal, an incline plane is driven straight down the *maximum* dip direct south; distance on the horizontal eighty yards, and dipping at the rate of eighteen inches to each of these

Sir,—My remarks on the changes in minerals by electric action were elicited in discussion, and were extemporaneous. As I have had no occasion to refer to the works of M. Becquerel for some years, I accidentally made a

to refer to the works of M. Becquerel for some years, I accidentally made a wrong quotation; this has, however, I believe, been rectified. The subjoined extract from M. Becquerel's work will show that the formation of sulphuret of copper, when the nitrate is used is not a new, but an old experiment, the sulphur for the purpose being supplied by the other salt employed.

4. *Clarence-street, Penzance, Nov. 8.* W. J. HENWOOD.

"We take a tube, bent into the form of the letter U, having its transverse part filled with clay, moistened with water. * * * A saturated solution of nitrate of silver is poured into one branch of the bent tube, and into the other a solution of the hypo-sulphite of potash. * * * One end of a wire plate of pure silver is then plunged into each of them. The reaction of the two solutions on each other, and that of the hypo-sulphite on the plate of

silver, produce electrical effects; in consequence of which the plate immersed in the nitrate becomes the negative pole of a voltaic apparatus. The nitrate of silver is slowly decomposed, and the plate immersed in it is covered with silver in a metallic state. In proportion as the liquid evaporates in the positive branch, we see at the bottom of the tube, and above the clay, some pretty octahedral crystals of sulphuret of silver formed on the silver. These crystals resemble in appearance those of the same substance that are found in silver mines. Let us substitute for the solution of nitrate of silver a solution of the nitrate of copper, and for the plate of silver a plate of copper, there is quickly found in the tube that side of the tube which contains the hypo-sulphite of potash a double hypo-sulphite of copper and potassium.

* * * This double hypo-sulphite is gradually decomposed, and we obtain at last, on the plate of copper, flat opaque crystals, with triangular faces. * * * These crystals are of a metallic grey colour, and some of them exhibit tints of a bluish cast; their powder is blackish. * * * And it is easy to perceive that they are composed only of sulphur of copper."—*Traité de l'Electricité et du Magnétisme*, III., p. 310 (published 1835). *Scientific Memoirs*, I., p. 430. *Mining Journal*, No. x., p. 227, December, 1857.

Henry Pinkus, Esq., late of Pantons-square, Coventry-street, but now of No. 36, Maddox-street, Regent-street, for an improved method or methods of applying electrical currents or electricity, either frictional, atmospheric, voltaic, or electro-magnetic, Nov. 14.—The first improvement consists in propelling vessels at sea, by the actions derived from the saline nature of sea-water, and its motion in waves.

The internal and external sides of the vessel are covered with electrical troughs or cells, in which are the usual combinations of metallic surfaces; and these are arranged so as to insulate the metal of the cells, the space between the cells and the sheathing of the vessel being occupied by a surface of pitched felt. The vertical edges of the copper and zinc surfaces of each cell are united, and then joined to a good metallic conductor on the inside of the vessel. Between the decks electrical troughs in tanks may be placed, with cells arranged in the common manner; but these must have lids, and be hermetically sealed. They must also have vent-pipes of proper dimensions, for conducting off gases, and be supplied with dip-pipes, inserted to one-third the depth of the tanks or troughs. The metallic surfaces must be united, and joined to main conductors, as above. These troughs are auxiliary, and may be used with varied electrical solutions, so as to combine different electrical elements. In the vessel is erected the electro-magnetic engine, described in the specification of a patent, which was granted to the present patentee Sept. 23, 1840. The magnets of this engine are connected with the aforesaid conductors, and its connecting rods are attached to the paddle-shaft and to a pair of supply engines, which are also worked by the action of three floats, placed one at each side of the vessel, and the other behind the stern; the floats being acted on by the rising and falling of the waves and the consequent motion of the vessel. The cylinders of the supply engines are arranged with clack-valves, as blast cylinders, for the compression of air, which is employed to work two driving-engines connected with the paddle-shaft.

In order to put the whole combination into action, the troughs and cells are charged, the cells with sea-water, and the tanks with the same, or other suitable solutions. The metallic circuits, mentioned in the former specification, being properly adjusted between the poles of the batteries, the main conductors and the poles of the magnets of the electro-magnetic engine, electric action will be induced in the cells and tanks, and electric fluid will pass by the main conductors to the magnets of the engine and put it into action. Motion will by these means, together with the action of the floats, be communicated to the supply engines and to the pumps which supply and circulate the sea water in the cells and tanks, for the purpose of inducing and continuing the electro-magnetic influence. The supply engines will thus be caused to force and compress the air into reservoirs, from whence it passes through pipes to the driving-engines, and puts the same in motion; the driving-engines being connected with the paddle shaft, will, together with the electro-magnetic engine, put the paddle-wheels in action. A modification of the above is described.

The second improvement is for the purpose of facilitating the working of the electro-magnetic engine described in the former specification, when the same is applied to the impulsion of vehicles on a suspension railway, or combined with a canal, for the purpose of conveying vessels, &c., along the same. The engine runs along a single rail, as before described, and on one side of the rail a rack is formed, into which a toothed wheel, carried by the frame of the engine, takes, and this wheel being driven by the electro-magnetic engine on the frame, will propel the engine, together with the carriages attached to it, or the engine by means of a rope will tow the vessel along the canal.

it, for the edging of the valve. The third improvement consists in the employment of an electric current, for the purpose of sealing and unsealing the pneumatic valve described in the former specification. On one side of the valve aperture of the main, a surface of oak wood, half an inch thick, and an inch and a half wide, is laid; on this is laid and bolted to the main a bar of soft iron, in a groove, on the upper surface of which is a quantity of cocoa-nut fat or oil, in a solid state, and to the tip of the valve short pieces of thin hoop iron are attached by rivets. By means of an electric current, the soft iron bars, insulated by the wood, are rendered magnets, and hold down the flexible valve, by the iron attached to the tip of the same.

JAMES GREGORY, coalmaster, and **WILLIAM GREEN**, tinner, both of West Bromwich, Staffordshire, for certain improvements in the manufacture of iron and steel, Nov. 14.—The improvements in the manufacture of iron consist in submitting the crude or cast iron to any of the following processes:—

The iron, either in the form of pigs, or broken into smaller pieces, is immersed in water, and allowed to remain exposed to its action, until an oily looking scum arises on the surface of the water. The iron thus operated on becomes softer and tougher.

If the iron is desired to be of a close texture, or of the kind called brittle iron, it is (after the above process) heated to redness in any convenient furnace, and then exposed again to the action of water, by plunging it into it, or pouring the water on it.

If the iron is originally of an impure kind, it is afterwards fused in that kind of furnace commonly called a finery.

Another process consists in melting the iron in a reverberatory or other furnace, and pouring it, while in a molten state, through the bottom of a vessel, which is perforated with holes one quarter of an inch in diameter, lined with clay, the metal being received by a vessel filled with cold water. The iron operated on in this manner possesses a close texture, and is of a white colour. The improvement in the manufacture of steel consists in mak-

Claim first.—The improving the quality of cast or pig-iron, by subjecting it to the action of water, whether such water is hot or cold, or the iron at the time of the application of such water is hot or cold.

Claim second.—The improving the quality of iron, by pouring it into water while in a melted state, and in the manner described.

IMPROVEMENT IN THE MANUFACTURE OF STEAM-ENGINES.
Specification of a patent for an improved mode of constructing the packing
for pistons, &c., of steam-engines, granted to Charles F. Pike, Providence,
Rhode Island. August 12.

To all to whom these presents shall come: Be it known that I, Charles F. Pike, of the city of Providence, in the county of Providence, and State of Rhode Island, have invented a new and improved mode of constructing the packing of pistons, piston rods, and valve stems; and I do hereby declare that the following is a full and exact description of the same. The nature of my invention consists in the use of cylindrical metallic wedges, without side of metallic rings, when used for the packing of pistons; and without side of metallic rings, when used for the packing of piston rods, or valve stems.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation. I construct my packing or steam-engines, or other pistons, by making two rings of cast-iron, or other metal, turned as large as the diameter of the cylinder, and so wide that the rings will just fill the space between the head of the follower of the piston when ground together. I then said rings open, so that they may expand to fill the cylinder. I then make a cylindrical wedge as wide as the two rings aforementioned, the external diameter of which will just admit it to slide within the aforementioned two rings when they are placed in the cylinder. The external diameter of said wedges being conical, and as much larger at one

external diameter of the said wedges being conical, and as much larger than the other, as may be deemed necessary, said wedges being cut longitudinally into four, or more, parts, so that each part may be forced out from the centre against the two rings aforementioned. I make another cylindrical wedge in the form of the frustum of a cone, and about seven-tenths as long as the last one named, the external diameter and taper of which corresponds with, and fits into the internal diameter of the large end of the other, the thickness of which I make sufficient to admit of screws being tapped into it, to move it longitudinally on the barrel of the piston. To keep said wedge in its place, I put in four, or more, screws, with collars on them, to be let into the followers, two on one side, and two on the other. Two with the collars on the inside shove the wedge ahead, and the other two hold it, or draw it, back. I construct my packing for piston rods, &c., by making two rings of brass, or other metal, of a diameter that will just admit them on the rod, and so wide as just to fill the space between the bottom, or the bushing, and the cap when ground together, and of a thickness of about one-eighth of

the diameter of the piston rod, which I cut open, and place on the rod, so as to break joints. I make a cylindrical wedge of a width and internal diameter, corresponding with the width and external diameter of the two rings aforementioned. I make said wedge thicker at one end than at the other, so that it give the proper taper, and cut it longitudinally, into four, or more, parts, so that each part may be forced into the centre against the two rings aforementioned. I make another cylindrical wedge about seven-tenths as wide as the last named, the internal diameter and taper of which corresponds with, and fits on the external diameter of the small end of the other. The thick end I make of a proper thickness to admit of four set screws, made in the same manner as described for the piston, the external diameter of which is the same as the internal diameter of the head or stuffing-box; I fit on a cap with set screws therein, to adjust the last named wedge, so as to keep the two rings snug to the rod.

Having thus fully described the manner in which I construct and arrange the respective parts of my metallic packing, what I claim therein, and desire to secure by letters patent, is the within described manner of packing the piston of a steam-engine by the combined action of the conical wedge operating upon the sectional wedges, and these upon the divided rings, the conical wedge being adjusted by set screws, the whole being constructed and operating substantially as set forth. I also claim the employment of divided rings to constitute the packing of a piston, these having been before used, but under an arrangement of the necessary parts, essentially different from that employed by me. I also claim the packing of piston rods, and of valve stems, by an arrangement of the respective parts constituting the packing, similar to that employed in the packing of pistons, but situated in a reversed order, the divided rings embracing the piston rods, or valve stems, as above made known.

EMPLOYMENT OF ELECTRO-MAGNETIC POWER AS A SUBSTITUTE FOR STEAM.

Truman Cook, New York city, for an electro-magnetic machine to obtain a moving force for driving machinery, August 25.—The following extract from the specification will give a pretty accurate idea of the invention. "Having thus fully described the manner in which I construct my electro-magnet apparatus, and likewise the manner of making the improved galvanic trough for actuating the same, what I claim therein as constituting my invention, and desire to secure by letters patent, is first, the arranging of the armatures upon a cylinder or drum, in combination with the pairs of electro-magnets so situated as that the negative and positive pole of each individual magnet shall, at the same moment, be over two contiguous armatures, in the manner herein set forth." "Secondly, I claim the mode of interrupting the galvanic circuit by means of the cams or notches, on the axis of the cylinder operating the wires which dip into the cups of mercury, as set forth, in combination with the stationary magnets and revolving armatures, arranged and constructed as herein described." "Lastly, I claim the galvanic battery herein described, composed of separate and distinct plates, communicating with cups of mercury, in the manner described, in combination with the electro-magnetic apparatus, consisting of stationary magnets and revolving armatures, as described." "At the period when this patent was obtained, a machine of considerable size had been built, for the purpose of driving the propelling apparatus of a boat; not having heard of the result of the experiment, we are compelled to infer that there is one more to be added to the list of unsuccessful attempts in the employment of the electro-magnetic power as a substitute for steam.

IMPROVEMENT IN PUDDLING-FURNACES.

Thomas Cooper, city of New York, for puddling-furnaces for manufacturing iron, August 25.—The patentee says—"The nature of my invention consists in providing a reverberatory-furnace with a hearth, space, or dead work, around the grate or fire-bars, by which the brickwork of the fire-chamber is protected from intense heat, and from which the clinker is easily removed. With a vertically descending flue when applied to puddling, scrapping, bittling, or heating iron with anthracite coal; and in the combination of two, or more, heating bottoms and fire-chambers in one furnace." "The grate is made in the middle of the chamber of combustion, or the receptacle for the coal, with dead brickwork all around, on which the coal, not fully ignited, rests, and the flue on the side of the heating, or puddling chamber, opposite the chamber of combustion, descends, and then passes out horizontally, to the chimney. The descending flue, when two heating chambers are employed, is used for the draft of the two chambers of combustion.

Claim.—"What I claim as my invention, and desire to secure by letters patent, is constructing the floor, or bottom of the fire-chamber, with a grate in the centre, as set forth, surrounded by a dead work for protecting the brickwork of the chamber, as described." "Also constructing the furnace with a vertical descending flue, in the manner, and for the purpose set forth." "Lastly, I claim combining two, or more, furnaces, constructed with grates and dead work, and having a descending flue, all as described."

MINING CORRESPONDENCE.

ENGLISH MINES.

HOLMBUSH MINING COMPANY.

Nov. 22.—I beg leave to inform you that the lode in the 100 fathom level, west of Wall's shaft, is fifteen inches wide, and worth 18l. per fathom; in the eastern part of this level driving north, small branches of ore have been intersected, but the main part of the lode has not yet been met with. The winze below the 100 fathom is sunk to the depth of the 110 fathom level, and the men now employed driving north, to communicate with the said level on the north lode. The lode in the eastern stopes, in the back of this level, is two feet wide, and worth 45l. per fathom; the lode in the western stopes, in back of ditto, is twenty inches wide, and worth 30l. per fathom. In the ninety fathom level west the lode is fifteen inches wide, and worth about 14l. per fathom. The lode in the eastern stopes, in the back of this level, is sixteen inches wide, and worth 20l. per fathom; the lode in the western stopes, in back of ditto, is eighteen inches wide, and worth about 28l. per fathom. In the eighty fathom level, east of Wall's shaft, no alteration. The eastern winze, in the bottom of this level, on the south branch, is holed to the ninety. In the ninety fathom level east, on this branch, the lode is small and unproductive. The lode in the western winze, in the bottom of the eighty fathom level, is still about eighteen inches wide, and worth 32l. per fathom. The lode in the stopes, in the back of this level, is eighteen inches wide, and worth 34l. per fathom. The rise in the back of the sixty-two fathom level east is communicated to Bray's shaft. The tribute pitches are without important alterations.

F. PHILLIPS.

UNITED HILLS MINING COMPANY.

Nov. 22.—Twenty Fathom Level—Lode two feet six inches wide, and producing but little ore. Thirty Fathom Level—The lode in this level is three and a half feet wide, and two and a half feet are of a fair quality. Forty Fathom Level—In the eastern end of this level the lode is two feet wide, with stones of ore. In the stopes the lode is two feet wide, with good ore. Forty-six Fathom Level—We can report no alterations in either of these adits since last week. James's Shaft—Lode three feet wide, intersected with some small veins of ore. Fifty Fathom Level—In the eastern end the lode is three feet wide, two feet on the north part good ore; in the western end the lode has much the same appearance as when last reported. Diagonal Shaft—No ground sunk in this shaft during the past week. Sixty Fathom Level, East End—The lode is three feet six inches wide, eighteen inches ore, with a very kindly appearance; at the western end the lode is four feet wide, of a coarse quality. Williams's Shaft—No lode broken in this shaft for the past week.

N. LANGDON. S. H. PEARCE.

TREGOLLAN MINING COMPANY.

Nov. 22.—Having held our monthly settling for December on Saturday last, you will perceive, from the accompanying setting report (showing our underground operations), that we have set thirteen tribute pitches, varying from 5s. to 12s. in the l., and from which it will also be seen that we have somewhat lessened our tutwork, notwithstanding we have set a new cross-cut to extend north, at the forty fathom level, with a view to intersect the northern lode, while, at the same time, we shall continue to extend this level on the course of the main lode, which is at present producing a great quantity of muddle, together with black and grey ore, which may be termed tribute ground. The lode in the thirty fathom level east is much the same as stated in my last—unproductive. We have deemed it expedient to delay any further opening on the north lode, at the adit level, on account of its shallowness from surface (although it has continued occasionally to produce good stones of yellow ore), and to wait the result of the cross-cut being extended thither from the forty fathom level.

JAMES NINNIS.

GREAT WHEEL CHARLOTTE MINING COMPANY.

Nov. 23.—In sending you the report of this mine, I beg to say the lode in the eighty-two fathom west from engine-shaft is eight feet wide, producing some good stones of ore. The lode in the same level east is five feet wide, but at present poor. The lode in the seventy-two fathom level west is seven feet wide, yielding about 6l. worth per fathom. The lode in the stopes, back of this level west, is three feet wide, turning out three tons per fathom, worth 4l. per ton. The lode in the stopes, back of this level east, is from two to three feet wide, worth 12l. per fathom. The lode in the seventy-two west, on the north part of the lode, is two feet wide, worth 15l. per fathom. The winze sinking under this level east from shaft is worth about 10l. per fathom. The lode in the stopes, bottom of the seventy-two west, is four feet wide, worth from 16l. to 20l. per fathom. The lode in the winze sinking under the seventy-two west is six feet wide, turning out about six tons per fathom, worth 4l. 10l. per ton. The winze sinking under the sixty-two, on the north part of the lode, is worth 6l. per fathom. The lode in the stopes, under the sixty-two fathom level west from shaft, is four feet wide, worth 15l. per fathom.

S. TREVETHAN.

TRAILHORN CONSOLS MINING COMPANY.

Nov. 20.—Our sumpmen have been employed the greater part of this week in putting in a lift at the seventy fathom level. The seventy east continues poor, and the lode small, but letting out a great deal of water; this level west is still in disorder ground; the lode appears in branches, with ore. At the sixty west the lode is eighteen inches wide, worth 15l. to 30l. per fathom, and promises to continue, if not improve. The fifty west continues good; the lode is three feet wide, and producing six tons of ore per fathom, or 50l. worth; this level east likewise continues good. In sinking the old sump-shaft we have a fine looking lode; it continues in two parts—altogether two and a half feet wide, and worth 12l. per fathom. At Good Fortune, in sinking under the forty-four, we have not taken down the lode since my last. The forty-four east is worth 7l. per fathom, and this level west is worth 10l. per fathom.

W. SINCOCK.

TRITON MINING COMPANY.

Nov. 22.—The lode in the forty fathom level, west of engine-shaft, is small and unproductive. The lode in the forty fathom level, east of engine-shaft, is nine inches wide, and good tribute ground. The lode in the thirty fathom level, east of Williams's shaft, is eighteen inches wide, and good tribute ground. The lode in the rise, in the back of this level, is one foot wide, and good tribute ground. The lode in the rise, in the back of the twenty fathom level, west of John's shaft, on John's lode, is six inches wide, and good tribute ground. The part we are driving on of the Mine Park lode, east of Morcom's shaft, at the adit level, is about eight feet wide, and very good tribute ground. We have begun to drive the twenty fathom level under adit, to intersect this lode; we are also driving the thirty under adit, for the same purpose, and we have begun to drive a level, fourteen fathoms above the adit and seventeen fathoms from the surface, to cut this lode.

H. WILLIAMS. J. MORCOM.

WEST WHEEL JEWEL MINING ASSOCIATION.

Nov. 22.—The ground in Buckingham's engine-shaft, sinking below the seventy fathom level, continues favourable. The fifty-seven east, on the south branch, is worth 12l. per fathom. The fifty-seven east, on Wheel Jewel lode, is eighteen inches wide, and worth 15l. per fathom. The fifty-seven west is twenty inches wide, with good stones of yellow and grey ore. We have not taken down Toleme lode, in the back of the thirty fathom level, in the past week. The deep adit west, on Wheel Jewel lode, is worth 4l. per fathom. We sampled on Wednesday last ninety five tons of ore.

STEPHEN LEAN.

REDMOOR CONSOLIDATED MINING COMPANY.

Nov. 22.—The sixty fathom level cross-cut is driven east of the shaft about nine fathoms, ground at present moderate. At the fifty fathom level going south, on the lead lode, the ground is also favourable; lode about six inches wide, rich for silver-lead ore. Driving north, at this level, the lode is four inches wide, yielding good work. At the forty fathom level going south the lode is in two parts, one of which is about four inches wide, composed of peach, spar, and lead ore, saving work; the other is small and unproductive. The lode in the north end, at this level, is about six inches big, good work for lead ore. Driving west, at the thirty fathom level, on the middle copper lode, the ground is moderate for driving; lode eighteen inches wide, composed of capel, spar, jack, muddle, and copper ore. The lode at Hurl-down, in the eastern end, is about ten inches wide, with peach, muddle, &c., but unproductive of copper; the branch in the western part gives but slight indications of its being the main lode. The pitches in the tribute department are looking much as usual.

F. R. ROWE.

CORNUBIAN MINING COMPANY.

Nov. 20.—After passing through an unexpected bar of ground we have intersected what we consider Chiverton lode in the sixty fathom level south of the engine-shaft about three fathoms; it is not rich, neither could we reasonably expect to find it so at this place, still it is presenting a kindly appearance, about one foot wide, and composed chiefly of a soft spar, muddle, &c. The ground on the other side is of a much more desirable nature, being a soft killas strata, our intention is to continue on the cross-cut further south, to cut what is termed the south lode, a distance of from four to five fathoms more, before open on the one already passed through. At the fifty fathom level driving west, Chiverton lode is about fifteen inches wide, and yielding but little ore; it is evident, however, since my last report an alteration in the ground and in the nature of the lode have taken place, and which have caused us to hope that ere long this end will be more productive than for the last several fathoms driving. Two pitches in the back of this level continue to look well, and from which we are breaking some rich quantities of lead. In the forty fathom level cross-cut going north from the gunns of the south lode, to cut Chiverton lode, the ground is not so hard as when we commenced, and appears quite congenial for ore. Murray's shaft, rising from the back of this level, continues wet and hard. We are driving north from Clifford's shaft, on Chiverton lode; it is eighteen inches big, producing stones of ore, and of a promising character. The remainder of the tribute department not noticed is much as previously reported on. On Friday last, the 18th inst., we sampled computed forty tons of good quality ore.

R. ROWE.

MINING NOTICES.

[Under this head we purpose collecting such paragraphs as may appear in the provincial and other Journals, having reference to discoveries and improvements in mining operations at home and abroad. It is hardly necessary to observe, that we must not be considered to admit the correctness of the information conveyed, which, in too many instances, requires cautious investigation—the sanguine expectations of parties in some instances, and the want of honesty in others, throwing a degree of responsibility on a Journal in giving publicity to reports, which we do not intend taking upon ourselves.]

COLLIERY WINNING.—The owners of South Hetton Colliery have succeeded in getting through the sand with all the three pits at Murton Winning; and in the middle pit they have passed through two thin seams of coal. The owners of Shotton Colliery have sunk through the sand immediately below the limestone in one of their pits, and they expect to get through the other next week.—*Northern Advertiser.*

WEST INDIA COAL.—The coal raised from the mine discovered about a year ago, about six miles from Havana, has been tried by the Spanish steam-irrigators, and pronounced by the engineers to be excellent in quality—superior to the best English. Analysis shows the coal to consist of the following parts:—Carbon, 71.74; oxygen, 6.32; hydrogen, 8.44; ashes, 13.50—100.00. The railroad from the port to the mine is in rapid progress towards completion. As the bed is believed to be very extensive, the enterprising proprietors anticipate handsome profits on their outlay whenever the West India steamers shall regularly call at Havana for a supply of fuel.—*Daily papers.*

ABERYSTWYTH COAL COMPANY.—The prospects of this company are of the most encouraging description; they held a meeting on the 28th ult., at which the directors declared a dividend of 7½ per cent. Several of the principal shareholders have it in contemplation to present the managing director (to whose able and judicious management the present prosperous state of their affairs may be attributed) with a splendid service of plate.—*Correspondent.*

SOUTH WINGATE COLLIERY.—The owners of this colliery and their friends met at Castle Eden on Thursday, the 11th inst., and proceeded thence by railway to a field belonging to M. Fowler, Esq., on his estate, called Castle Hall, where the first sod was turned by Mrs. Ellison, of Hutton Henry, and many a hearty cheer was given by the company assembled for the success of this spirited undertaking.—*Durham Advertiser.*

MINING IN SPAIN.—A correspondent of the *Morning Herald* states that the Toledo Mining Company is now working a lead mine that yields 80 per cent., and it is about undertaking works in a silver and lead mine.

IRISH MINES.—The copper veins of ore lately discovered on Lord Doneraile's estates, in the county Waterford, by Mr. St. Pierre Foley, mining engineer, alluded to in a former Number of our paper, are opening and exhibiting most favourable indications of a rich mine at a moderate depth. A note, left at our office by the discoverer, on his way to Limerick, states that the miners are at present working through a lode of muddle, mixed with grey and yellow copper ore, of six feet in breadth; the veins, stone quartz, and the rock in which the ore is found, greywacke. A lead mine, of promising return, is now opening at Annstown, and two copper mines at Stradbally, by English companies, all in the county Waterford. Mr. Foley says, in his note, that there are mines in Waterford, and even in the neighbourhood of our own town, which, if properly developed, would give employment to 100,000 miners, with a certainty of a good return of interest to the adventurers who would embark in these concerns. Strong indications have appeared on part of the property of John Power, Esq., of Gorteen, and on Lady Osborne's, in the same locality.—*Tipperary Free Press.*

MINE ACCIDENTS.

[A correspondent, after lamenting the great number of accidents weekly recorded in our columns, remarks that—"It is at present the custom at iron-works for a certain 'poundage' to be deducted, monthly, from each workman's wages, as contribution to a 'doctor's fund'; the aggregate of which contributions, in the coal and iron trades of Monmouthshire and Glamorgan-shire, has, at a very low computation, been estimated to amount to 25,000l. a year! Now, if this large appropriation of the wages of the working-classes were paid into the fund, and a Central Hospital-Staff and Establishment formed therewith (with necessary branches at the respective works), for administering the best possible medical and surgical relief to all sufferers, from either illness or accident, from whose wages the 'contributions' alluded to are deducted, not only by advice, but by supplying whatever medicines, food, and attendance the respective patients may be in need of, I think it may be readily shown, that a very great amelioration would take place in the condition of the labourers and artisans of this populous neighbourhood."]

Terrible Explosion in a Coal pit at Barnsley.—On Monday morning about fifty-six colliers had gone to work in the coal-pit belonging to Messrs. Day and Twibell, when an explosion of coal gas took place, which destroyed a great number, and burnt many others so severely that it is feared few will recover. The pit adjoins the town, and the news of the misfortune rapidly spread amongst the relatives of the unfortunate workmen; wives came to the mouth of the pit as the men were drawn up to know the fate of their husbands, and children that of their parents, and an awful scene presented itself. The fire so disfigured the sufferers, that the women at first could not recognise their husbands and children; the accident has spread a complete gloom through the town.—An inquest was held on Tuesday on the bodies of fifteen of the unfortunate sufferers, when, in consequence of the frequent accidents of a similar nature, although seldom so serious an extent, the working miners and under-stewards were most closely examined to ascertain if any carelessness had existed in the working of the mine; but it was established by the working men themselves (contrary to reports) that the coal-pit was in a very good state of ventilation; that the air passages were open and worked well; that the proprietors had careful and experienced under-stewards, good provision of safety-lamps, and, in fact, everything that could be provided on the part of the proprietors. One thing only was needed, which experience proves cannot be secured, and that is, individual attention on the part of the working miners themselves. In this case one of the under-stewards had made up the way to one of the working roads, where there was danger, so as to prevent any straggling workman from going in, and specially prohibited the man himself, who had been working there, from going in, and had set him to work in another part of the mine, but having left some part of his tools he went into the place where the air was impure with a lamp, not having the gauge upon it, in consequence of which the accident took place, and extended to other parts. The man himself (Scholey) was killed, and fourteen of his fellow-workmen sacrificed by his carelessness. One most melancholy occurrence took place. Mitchell, one of the under-stewards, exerted himself to the utmost of his power, by dragging some of the workmen to the mouth of the pit, so as to get them out of the influence of suffocating air when they had fallen insensible under its effects, and, after saving the lives of four men, at last fell himself, forfeiting his own life in his benevolent exertions for the workmen around him; he was a valuable servant, a steady man, and his death, under such circumstances, is deeply regretted. The jury returned a verdict of "accidental death."

Dalton-in-Furness.—Thos. Lowry was killed at the iron ore pits of Messrs. Power and Rawlinson, by the falling of a quantity of earth (about sixty or seventy tons), which completely entombed him under the ponderous load.

Explosion of Fire-damp in Belgium.—A dreadful explosion has taken place in the coal mines of P. Felix (Hainault), at a depth of 1450 feet; a number of persons were soon at work to clear away the mass of crumbling earth, &c., that choked the entrance to the mine; a young engineer, who was first on the spot, rendered all the assistance in his power, exhibiting great coolness, and succeeded, with the aid of a miner, in abstracting four dead bodies, and five wounded men; but, alas! twenty-nine miners are supposed to be yet under the earth, whether living or dead is not known.

We depart somewhat from the strict pursuance of our prescribed rule, of confining remarks to events connected with subjects to which the Journal is particularly directed, for the purpose of noticing the lamented demise of Mr. John Cunningham, of Fleet-street, whose removal from a connection with this Journal, which has existed from nearly its commencement, at least calls for a passing mark of regret; but, as a friend of many years standing, and being intimately connected with his estimable qualities, we cannot help recording our opinion of his character, and expressing the deepest sorrow at the death of a sincere friend and truly honest man; he was universally respected for his benevolence, and his loss will be severely felt by a numerous body, which his amiable and exceedingly charitable disposition had closely attached to him.

FROM THE LONDON GAZETTE.

Tuesday, November 23.

INSOLVENTS.

Nov. 17.—Benjamin Paine, New Windsor, victualler.
22.—Jonathan Taylor, Liverpool, oil dealer.
Jonathan Freeman Bullen, Bury St. Edmund's, Suffolk, hosier.
William Phillips, Llangunlloyd, Brecknockshire, victualler.
23.—Benjamin Birkett Parlor, Alfred-street, Stoney, victualler.
BANKRUPTCY ANNULLED.
John Turlay, Manchester, merchant.

BANKRUPTS.

W. B. Overton, Howford-buildings, Fenchurch-street, and Park-road, Dalston, ship broker. [Vandermom and Co., Bush-lane.
R. P. Vint, Nelson-place, Old Kent road, linen-draper. [Vandermom and Co., Bush-lane.
H. Hap, Leeds, silk dyer. [Wiglesworth and Co., Gray's Inn-square.
C. Gatchouse, Bristol, surgeon. [Holme and Cox, New Inn.
R. Holding, jun., Blackburn, Lancashire, coal merchant. [Holme & Co., New Inn.
B. Read, Worcester, wine merchant. [Becke and Flower, Lincoln's Inn-fields.
J. Jervis, Wells, Somersetshire, draper. [Davison and Co., Broad-street, Chelmsford.
G. A. Rayner, Halesworth, Suffolk, linen-draper. [Sole, Aldermanbury.
J. and J. W. Lindsay, North Shields, grocer. [Treharne and Co., Lendenhall-street.
P. Williams and C. Mottram, Wood-street, Manchester warehousemen. [Abbott and Amory, Charlotte-street, Bedford-square.
J. King, Bristol, dealer in ship's stores. [Makinson and Co., Middle Temple.
S. Gillott, jun., Sheffield, hatter. [Brookfield, Raymond-buildings, Gray's Inn.
J. Hawarden, R. Myerscough, and J. Jackson, Little Bolton and Manchester, manufacturers of cotton cloth. [Johnson and Co., Temple.
W. Reynolds, Brightmet, Lancashire, cotton spinner. [Milne and Co., Temple.
S. S. Chancellor, jun., Isle of Thauet, baker. [Egan and Co., Essex-street, Strand.

DIVIDENDS.

Dec. 16, R. Stockdale, Crosby-square, merchant—14, S. Hall, Duke-street, West Smithfield, brazer—14, A. Thomson, Lendenhall-street, merchant—J. Stammer, Charles-street, Grosvenor-square, brush dealer—15, Sir G. Duckett, Bart., Six F. B. Morland, Bart., and T. F. Bernard, Pall-mall, bankers—G. Wightman, Paternoster-row, bookseller—14, J. Marshall, Bradford, Yorkshire, ironmonger—J. Taylor, Ipswich, grocer—16, R. B. Cross, New Woodstock, Oxfordshire, glover—21, T. and J. B. Steel, Stockport, cotton spinners—17, J. Heap, jun., Manchester, merchant—22, J. Saul, Holme Cultrum, Cumberland, schoolmaster—17, B. Wilson, Newcastle-upon-Tyne, colliery owner—16, W. Elder, Newcastle-upon-Tyne, grocer—17, W. Bell, sen., Bath, upholsterer—16, C. H. Lowe, Nottingham, lace manufacturer—J. Blanthorn, Shrewsbury, mercer—B. Turner, W. Maynard, J. Oldroyd, R. Shaw, J. Howgate, E. Bailey, R. Stapleton, J. Bromley, J. Castle, J. Milnes, T. Hilditch, S. Oldroyd, and J. Brearley, Batley Carr, near Dewbury, Yorkshire, woollen millers—15, 16, 17, and 18, E. Weatherly, J. H. Ford, W. L. Hilton, R. Addison, and R. Gibson, Manchester, and Holywell, Flintshire, cotton spinners—20, J. A. Griffin, Liverpool, merchant—16, J. Taylor, Brighthelmston, Sussex, bookseller—20, P. Foxwell, Painswick, Gloucestershire, clothier—Jan. 1, S. and S. Stocks, Manchester, manufacturers.

CERTIFICATES to be granted, unless cause be shown to the contrary, on or before Dec. 14.

E. Knibb, Liverpool, tailor—A. Harrison, Manchester, grocer—E. Tanager, Fish-street-lane, ship agent.

Friday, November 19.

INSOLVENTS.

Nov. 25.—Abraham Shute, Nuneaton, wa. wickshire, clothier.
26.—A. Laurier and J. Lock, Wood-street, City, importers of foreign goods.
BANKRUPTCIES SUPPLEMENTED.
Cooper Searle, Bury St. Edmund's, printer.

BANKRUPTS.

R. H. C. Hunt and E. O. Smith, Old Broad-street, merchants. [Heathcote and Co., Coleman-street.
L. Schwabacher, Minorities, wine merchant. [Spiller, Bank-buildings, Lothbury.
H. F. C. Kerr, J. H. Baughman, and T. F. Haines, Suffolk-street, Pall-mall-east, army agents. [Pain and Matherly, Great Marlborough-street.
W. Barnes, St. Paul's Churchyard, milliner. [Turner and Hensman, Basing-lane.
C. Richardson, Bramley, Surrey, builder. [Blackmore and Co., New Inn.
J. Hey, jun., New Fallow, Yorkshire, carpenter. [Addington and Co., Bedford-row.
S. Evans, Read, Somersetshire, clothier. [Frampton, South-square, Gray's Inn.
J. H. Bazoley, Manchester, warehouseman. [Johnson and Co., Temple.
T. Lyster, Manchester, corn factor. [Johnson and Co., Temple.
H. Groves, Leamington Priory, Warwickshire, timber merchant. [Cary, St. Swith.
J. Brown, Birmingham, victualler. [Chaplin, Gray's Inn-square.
T. Wood, Oldbury, Shropshire, costmaker. [Chaplin, Gray's Inn-square.
J. Nock, Manchester, lace dealer. [Yallop, Furnival's Inn.
S. Higginbottom, Dukinfield, Cheshire, shopkeeper. [Richards and Co., Lincoln's.
E. Leech, Cinderhill, Lancashire, cotton spinner. [Sharpe and Co., Bedford-row.
W. Pennington, Marple, Cheshire, grocer. [Milne and Co., Temple.
J. Griffin, Dudley, Worcestershire, upholsterer. [Combe, Staple Inn.

DIVIDENDS.

Dec. 17, W. Savage, Surrey-street, Strand, lodging house keeper—J. Dunsay, Uxley, Gloucestershire, woollen manufacturer—29, J. Clarence and J. G. Chaudron, Abchurch-yard, coffee dealers—J. Appleton, Three Crown-square, Southwark, hop merchant—G. A. Lawson, Oxford-street, carpet warehouseman—17, T. Carter, Chapsdale, woollen draper—C. Hall, Piccadilly, upholsterer—J. Leary, Quadrant, Regent-street, coffee house keeper—A. Goldschmidt, C. W. Stokes, and E. Meyer, Great St. Helen's merchants—20, W. Ward, Saffron Walden, Essex, carpenter—M. Atkinson and J. Laidlaw, sen., Penrith, Cumberland, bankers—22, M. Atkinson, Appleby, Westmoreland, brewer—20, R. Root, Warrington, Oxfordshire, draper—R. Kippenner, Liverpool, tailor—22, B. Saxon, Birmingham, ironmaster—March 21, J. Caparn, Riddings, Derbyshire, common brewer—Dec. 29, J. Crutebatt, Strand, pawnbroker—25, E. Skilman and A. C. Keeler, Hythe, Kent, linen-draper—17, A. Browning and W. Small, jun., Manchester, merchants—22, J. Shaw, Hencor, Derbyshire, plumber—R. R. Timings, Birmingham, grocer—21, P. Ditchfield, Hindley, Lancashire, cotton spinner—20, S. Stocks, sen., Heaton Mersey, Lancashire, bleacher—18, W. Haginbottom, Ashton-under-Lyne, Lancashire, cotton spinner—22, A. Pothergill, Rochdale, Lancashire, cotton spinner—20, B. Wright, Calbrook Dale, Temple Sowerby, Shropshire, draper.

CERTIFICATES to be granted, unless cause be shown to the contrary, on or before Nov. 17.

J. Cockcroft, Addingham, Yorkshire, stuff manufacturer—J. Little, Stockport, Chesh. lre. banker—J. Quarterman, Warrand, Essex, coachbuilder—R. Root, Warrington, Oxfordshire, draper—J. Gillies, Hatfield, Durham, shipowner—B. Wood Chester, luncheon—J. S. Jackson and J. Singleton, Leeds, carriers—J. W. Wood James, Liverpool, timber merchant.

MONEY MARKET AND CITY NEWS.

CURRENT PRICES OF ENGLISH AND FOREIGN FUNDS.

Consols Money, 89½	Danish, 3 per Cent., 78 9
4 per Cent., 89½	Dutch, 2½ per Cent., 52 ½
New 4½ per Cent., 90 ½	Portuguese, 5 per Cent., 324 2
Reduced 4½ per Cent., 88 ½	Portuguese, 3 per Cent., 193 20
Long Annuities, 12½	Russian, 5 per Cent., 113 ½
Bank Stock, 164 ½	Spanish, 5 per Cent., 23½
Exchequer Bills, 8 10 pms.	Chili, 6 per Cent., 71 3
Belgian Bonds, 5 per Cent., 100½	Colombian, 6 per Cent., 192 20½
Brazil, 5 per Cent., 57½	Mexican, 5 per Cent., 25½ 6

REMARKS ON THE OPERATIONS OF THE WEEK.

SATURDAY, Nov. 20.—The national securities have been steady, and without material variation on the last quotations; the markets in general were in a neglected state throughout the day, with the exception, perhaps, of Spanish bonds, in which some slight improvement took place, owing to a report that the Spanish Government were about to fulfil their promise of paying the dividends on the capitalised Active stock, which induced parties to speculate in that particular security. The dealings in railway shares, which have been hitherto in a state of improvement in South-Westerns, are now marked 5½ to 4 per share. In mining and bank shares there was little business; Cata Branca were marked 5½ to 6, and London Joint-Stock Bank 124 ½.

Letters from Hanover, under date November 4, state that the assembly of the states will meet early in next month, and that the question of the establishment of iron railways is a principal reason of the Government hastening the meeting of the estates. Several failures are announced to-day; one of them, an extensive Italian house in the silk trade, whose drafts have been accepted to a considerable amount in the city; another Spanish firm of some importance at Xeres, said also to have suspended payments, and there is a report of a large brewing establishment nearer home.

MONDAY.—The funds exhibited rather more of firmness to-day, which occasioned a better feeling, prices generally bore an upward tendency, and the public securities are altogether looking better than at the close of last week. Consols improved to 89½ to 90, both for Money and Account; India stock also advanced to 248 to 50. The favourable character of the Spanish intelligence, and the new financial decrees of the Portuguese Government, produced a marked improvement in the Peninsular securities; Spanish Actives are now quoted at 22½ to 3; Portuguese 5 per Cent., 31½ to 22; Belgian, 100 to 1; Brazilian, 57½ to 58; Mexican, 25½. There was but little change in the share market, business still remaining limited. South-Westerns were done at shade higher, which is the only change of consequence in the market. In other shares, the only transactions were—Blaenavon Iron and Coal Company, 84; Australasia Joint-Stock Bank, 51; London Joint-Stock, 124; Union of Australia, new, 21.

It is a satisfactory proof of the state of commercial credit at this time, that although the bills due on Saturday were more numerous than usual, there was scarcely any instance of dishonour; one of the great discount houses had no less than 250,000*l.* in amount, and of these every one was paid.

TUESDAY.—The market was tight throughout the day, and at one period money was worth 6 to 7 per cent., but at the close of business it was procurable at the ordinary rate of interest; the stocks, too, for a time, were firm at a slight improvement, which, however, was not maintained, the closing prices being about the same as yesterday. Business in the foreign market was chiefly confined to Spanish stock, in which transactions were rather numerous, at a further advance in prices, being, at the close, quoted 2½; Portuguese bonds were also higher, attributable to the favourable news received from that country, and to the improved condition of the Spanish market. There was but limited business in the share market—railways, however, were decidedly looking up; London and Birmingham were done at 157; Brighton, 37½; Greenwich, 17½; and Blackwall, 8½ to 9½ per share. London Joint-Stock Bank, 124; Provincial of Ireland, 40½; and Union of Australia, new, 21.

More business was done to-day in the foreign exchanges. Paris remained much the same as last post, but the rates upon Hamburg, Amsterdam, and Antwerp were rather higher. Amsterdam, short, 12 3¼; Hamburg, 13 10¼ to 2; Paris, 25 4¼ to 47½; Antwerp, 12 4; Rotterdam, 12 5½.

The advances from Lancashire to-day are not of a cheering character. Messrs. T. and H. Crofts, of Liverpool, who are concerned in the soap trade, have failed, and their liabilities are supposed to amount to 45,000*l.* The acceptances of Messrs. Glasborne and Wilson, calico printers, of Manchester, a firm of some importance, have been refused by the bank, and the house has been in a state of liquidation. These occurrences, and it is expected in some quarters that the Manchester house will satisfy all its creditors.

The premium on gold at Paris is 5 per mille, which, at the English Mint price of 3*l.* 17*s.* 10*d.* per ounce for standard gold, gives an exchange of 25.27, and the exchange at Paris on London at short being 25.42½, it follows that gold is 9.02 per cent. dearer in London than in Paris.

By advices from Hamburg the price of gold is 42*s.* per mark, which, at the English Mint price of 3*l.* 17*s.* 10*d.* per ounce for standard gold, gives an exchange of 18.65, and the exchange at Hamburg on London at short being 18.8, it follows that gold is 0.09 per cent. dearer in London than in Hamburg.

WEDNESDAY.—The national securities were a shade higher, and a good deal of general business was transacted during the day; the tightness of money was more measure relieved by the Bank broker making advances on stock, to which also may be attributed the improvement in quotations; the current worth of cash for short periods was from 5 to 6 per cent.; Consols for Money and Account closed at 89. There was also more business doing in the foreign market, and the transactions in Spanish were unusually brisk, and the nature of purchases made showed that the dealings were not of a purely speculative character; the closing price was 24½ to 4, an advance of nearly 2 per cent. The share market was firm, and the quotations for some of the principal lines ranged higher, but the business transacted was still of a limited character; the Brighton line was heavy at 38½ to 7 per share. Brazilian (Mocaba and Cocas United), 4; London and Westminster Bank, 21½; Union of Australia, new, 23½ to 4.

THURSDAY.—The settlement passed off quietly, and money became easier in consequence; the taking of a large amount of stock by a leading broker, for an influential money firm, also afforded relief to the market; the funds closed firm at a slight improvement. The business in the foreign market continues to be chiefly confined to the Peninsular securities; Portuguese bonds are tolerably steady, but Spanish Actives declined ½ per cent., occasioned, we believe, by parties who bought at the late low prices having evinced a desire to realise; the same brokers, however, afterwards operated as buyers. For Dutch 3½ per Cent. there was a higher price, the advices from Amsterdam bringing advanced prices there. The share market continues with scarcely any change in the leading lines, with but little doing. Hibernian Mining Association, 21; London Joint-Stock Bank shares were done at 124; Provincial of Ireland, 40½; and Union of London, 9½.

The following notice was issued this afternoon at the Bank of England:—“The governor and company of the Bank of England are ready, until further notice, to receive applications for loans, upon the deposit of approved bills of exchange not having more than six months to run, Exchequer Bills, and East India Bonds, such loans to be repaid on or before the 14th of January next, with interest at the rate of 5 per cent. per annum, and to be for sums of not less than 200*l.* each.”

FRIDAY.—Business was on a limited scale during the day, and prices did not maintain the improvement of yesterday; money was also somewhat scarcer. The speculative securities were a shade flatter, and but little dealing took place; there was a slight reaction in Spanish, as is usually the case after a rapid rise, the closing price being 23½ to 4. The quotations in the share market present rather an improved appearance, but there were no occurrences that call for particular remark. Australasia Bank shares were quoted 51 to 2; ditto, new, 13½; British North American, 33; and London and Westminster, 21½.

The rates negotiated for bills on “Change to-day were—12 3 to 4 for Amsterdam, short; 12 4½ to 5 for Antwerp, short; 12 5 to 6 for Rotterdam; 13 10½ to 2 for Hamburg; and 25 4½ to 47½ for Paris, short.

The following supplemental notice was added by the Bank of England to that issued yesterday:—“In every case of an advance by the Bank of England, in pursuance of the notice dated this day, a promissory note will be required, whether such advance be upon Bills of Exchange, Exchequer Bills, or India Bonds.”

BANK OF ENGLAND.—TRANSFER BOOKS.

SHUT.		OPEN	
5 per Cent. Consols	Thursday, Dec. 2, 1841.	Friday, Jan. 14, 1842.	
New 4 per Cent.	Friday	" 3	Friday .. 14
3 per Cent.	Thursday	" 10	Tuesday .. 11
New 5 per Cent.	Friday	" 10	Tuesday .. 11
Ann. for terms of years ..	Monday	" 6	Friday .. 21
South Sea Stock	Monday	" 6	Wednesday 12
Ditto New Annuities	Tuesday	" 7	Thursday .. 13
3 per Cent. 174	Tuesday	" 7	Thursday .. 13
India Stock	Thursday	" 2	Tuesday .. 18

[From our own correspondents.]

LATEST PRICES OF IRISH STOCKS.—3 per Cent. Consols, 88—3½ Stock, 97½—Ditto New, 180, 97½—3½ per Cent. Debentures, 90½—Bank Stock, 170½—Kings-town Railway, 77½—Drogheda, 10—National Insurance Company, 27—City of Dublin Steam Company, 114½—ditto Stock, 183½—56—British and Irish Steam Company, 12—Hibernian Bank, 26½—Royal Bank, 92—Mining Company of Ireland, 142—Wicklow Copper Mines, 13½.

PARIS, Nov. 25.—5 per Cent., 116½ 40c.; 4 per Cent., 101½; 3 per Cent., 80½ 30c.; ditto Loan, 1841, 81½ 10c.; Bank Actions, 340½; Rente de Naples, 106½ 70c.; Romans, 102½; Spanish Actives, 25; Belgian 5 per Cent., 181½ 10½; ditto, 1840, 302½; Belgian Bank, 290½; Haytian Loan, 635½; Versailles Railway, R. B., 818½ 75c.; L. B., 202½ 30c.; Rouen, 425½ 50c.; Orleans, 455½; Strasbourg to Bâle, 200½. Exchange on London, one month, money, 25½ 30c.; three months, money, 26½ 10c.

NEWCASTLE.—North of England Joint-Stock Bank, 51 58; Northumberland and Durham District, 82½; Newcastle, Shields, &c., Union, 87½; Newcastle-upon-Tyne Joint-Stock, 21½; Sunderland Joint-Stock, 61; Stockton and Durham County, 64½; Newcastle and Carlisle Railway, 94½; Newcastle and North Shields Railway, 48½; Bransford Junction, 47½; Great North of England, 65½; Hartlepool Dock and Railway, 180; Stockton and Hartlepool, 44½; Clarence, 4—London, Newcastle, and South Shields Shipping Company, 51; Port of Newcastle, 21½; Gateshead and Tyne, 20½; Newcastle U. N. 4½—Newcastle Marine Insurance Company, 44½; Newcastle Commercial, 11 35; Durham County Coal Company, 94½; Northern Coal Mining, 47.

HULL, THURSDAY.—We have to record a more busy week; prices, however, are generally lower. Grain and Juncions, London and Birmingham, and Midland Counties, 182½ given way; York and North Midlands and Great North of England are improving, and their prices well sustained. Birmingham and Derby Railway, 187 to 92½; Birmingham and Gloucester, 5 1 to 57½; Grand Junction, 181½; Great North of England, 65½ to 67½; Great Western, 79½ to 80½; Hull and Selby, 84½; Leeds and Selby, 96½; Liverpool and Manchester, 196½; London and Birmingham, 166½ to 168½; London and South-Western, 56½ to 57½; Manchester and Leeds, 67½; Midland Counties, 82½ to 83½; North Midland, 63½ to 64½; Sheffield and Rotherham, 82½; York and North Midland, 87½; Yorkshire District Bank, 47½; Hull, 21½; Yorkshire Agricultural, 34½; Sunderland Joint-Stock, 54½; Hull Gas Works, 25½; Hull Flax and Cotton Mills, 164.

BRISTOL, FRIDAY.—Our market is firm at my quotations, although but very little business doing. Great Western Railway, 79½ to 80½; halves, 56½ to 57½; 5th, 84½ to 85½; Bristol and Exeter, 27½ to 28½; Bristol and Gloucester, 11 to 21; Birmingham and Gloucester, 56½ to 57½; Cheltenham Union, 94½ to 7½; Taff Vale, 66½ to 70½—Bristol Gas Company, 32½.

GLASGOW, WEDNESDAY.—Ballochney Railway, 81½; Dundee and Arbroath, 25½; Edinburgh and Glasgow, 42½; Garnkirk and Glasgow, 40½; Glasgow and Greenock, 23½; Glasgow, Paisley, Kilmarnock, and Ayr, 38½; Monkland and Kirkcaldy, 56½; Siamannan, 28½; Wishaw and Coltness, 40½.

EDINBURGH, WEDNESDAY.—Edinburgh and Glasgow Railway, 43½; Dalkeith and Edinburgh, 30½; Glasgow and Greenock, 23½; Glasgow and Garnkirk, 38½; Glasgow and Ayrshire, 35½; Wishaw and Coltness, 40½; Dundee and Arbroath, 25½; Arbroath and Forfar, 22½.

MANCHESTER, THURSDAY.—Manchester and Birmingham Railway, 23½; Manchester, Bolton, and Bury, 53½; Manchester and Leeds, 56½—Bank of Manchester, 44½; Stockport, 24½; Manchester and Liverpool District, 104½; Manchester and Salford, 94½; South Lancashire, 41½; Union of Manchester, 52½—Manchester Fire and Life Assurance Company, 94½—Manchester Exchange Buildings, 86½—Manchester and Liverpool Plate Glass Company, 31; Union, 7½.

EXPORTATION OF BRITISH AND FOREIGN METALS from the ports of London and Liverpool, for the month ending October 31, 1841:—

	British.	Foreign.	Total.
Iron, tons	7,817	459	8,276
Steel, tons	118	127	245
Copper, tons	40	340	380
Do. sheets, tons	193	—	193
Tin, tons	17,889	—	17,889
Do. plates, boxes	1,091	168	1,259
Lead, tons	203	203	406
Spelter, tons	—	203	203
Quicksilver, lbs.	—	420,990	420,990

SALE OF COPPER ORES IN CORNWALL.

Sampled Nov. 10, and sold at Pearce's Hotel, Truro, Nov. 25.

Mines.	Tons.	Price.	Purchasers.	Mines.	Tons.	Price.	Purchasers.
Consols	102	47	0. Freeman.	Hallenbeg	75	4	0. Vivians.
ditto	99	5	18 0. Nevill & Co.	ditto	66	6	13 0.
ditto	97	7	0.	ditto	65	6	12 6. Mines Royal
ditto	87	6	2 6. Vivians.	ditto	18	2	8 6. P. Grenfell.
ditto	78	6	19 6. Nevill & Co.	Wh. Ellen	36	3	18 0. Nevill & Co.
ditto	76	6	13 6.	ditto	21	4	6. Mines Royal
ditto	75	10	0.	ditto	21	4	6. Williams.
ditto	74	6	6 6. P. Grenfell.	ditto	38	6	1 6. Mines Royal
ditto	72	6	2 6. Nevill & Co.	ditto	32	8	18 0. Nevill & Co.
ditto	19	3	13 6. Vivians.	ditto	34	3	1 6. Vivians.
ditto	19	3	13 6. Freeman.	ditto	34	3	1 6. Freeman.
ditto	19	3	13 6. P. Grenfell.	ditto	44	6	9 6. Vivians.
ditto	56	6	7 0. Freeman.	ditto	32	1	7 0. Freeman.
ditto	51	5	13 6. Vivians.	Unit Wood	79	16	6. Williams.
ditto	50	5	9 0. Freeman.	ditto	34	10	4 6. Freeman.
ditto	5	12	3 0. P. Grenfell.	ditto	7	1	0. Williams.
United M.	141	5	9 0.	ditto	7	1	0. Nevill & Co.
ditto	106	5	9 0.	Trevaras	41	5	19 0.
ditto	102	10	3 6.	ditto	41	5	19 0. Vivians.
ditto	101	11	2 0.	ditto	41	5	19 0. Williams.
ditto	70	7	11 0.	Harmony	36	5	18 6.
Trethellan	115	5	9 6. Mines Royal	ditto	35	5	18 6.
ditto	114	5	19 0. P. Grenfell.	ditto	14	2	1 0. P. Grenfell.
ditto	56	3	1 6. Vivians.	Cardew	27	6	17 6. Williams.
ditto	56	3	1 6. Nevill & Co.	W. Vyryan	55	1	0. Freeman.
ditto	80	4	18 0. P. Grenfell.	ditto	40	7	6 6.
Trevaran	121	6	1 6. Vivians.	Tregollan	41	2	19 0. P. Grenfell.
ditto	86	8	13 6. Freeman.	ditto	29	2	16 0. Freeman.
ditto	384	5	16 6. Mines Royal	Br. Silver	—	—	—
ditto	38	8	11 0. Mines Royal	lead and	60	7	17 6. Vivians.
ditto	38	8	11 0. Freeman.	Copper	—	—	—
Fowey C.	102	6	2 6. Vivians.	ditto	40	3	7 0. Nevill & Co.
ditto	71	6	2 6. Freeman.	ditto	20	3	7 0. Freeman.
ditto	70	8	6 6.	Boleena	34	3	7 0. Williams.
ditto	67	7	8 0.	ditto	15	3	19 0. Freeman.
Hallenbeg	78	1	11 6. Williams.	W. Tehidy	43	8	4 0. Nevill & Co.

TOTAL PRODUCE.

Consolidated	977	6427	16	0.	Wh. Harmony	112	635	0	0.
United Mines	520	4227	1	0.	Cardew	27	350	15	0.
Trethellan	421	2044	6	0.	Wh. Vyryan	95	202	3	0.
Trevaran	360	2579	9	0.	Tregollan	70	202	3	0.
Fowey Consols	310	2136	9	0.	Brit. Silver-lead	70	501	10	0.
Hallenbeg	390	1345	15	6.	and Copper	70	501	10	0.
Wheal Ellen	192	1005	2	0.	Perran Mines	60	208	0	0.
Gr. Wh. Charlotte	144	537	4	0.	Boleena	50	177	2	0.
Wh. Unity Wood	127	944	13	6.	Wh. Tehidy	43	352	12	0.
Wh. Trevaras	125	743	15	0.					

Average standard, 130*l.* 0*s.*—Average produce, 64*l.* 2*s.* 6*d.*—Quantity of ore, 3976 tons.—Quantity of fine copper, 272 tons 6 cwt.—Amount of money, 24,458*l.* 13*s.* 6*d.*—Average standard of last sale, 127*l.* 2*s.*—Average Produce, 72.

COMPANIES BY WHOM THE ORES WERE PURCHASED.

	Tons.	Amount.
Mines Royal Company.....	3154	1928 19 9
Vivian and Sons	1013½	6052 17 7
Freeman and Co.	611	3551 13 6
Grenfell and Sons	881	6096 14 6
Sims, Williams, Neville, Druce, and Co.....	790½	5060 3 10
Williams, Foster, and Co.	358½	1768 4 4

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcells.—East Wheal Crofty, &c., 721; East P. ol, 315; United Hills, 310; Dolcoath, 295; Fowey Consols, 217; South Wheal Bassett, 181; Camborne Vein, &c., 180; Wheal Harriet, 180; Trevel, 165; Wheal Kitty, 142; West Wheal Jewel, 95; Wheal Clifford, 40; Wheal Sparrow, 13.—Total, 2850 tons.

Copper ores for sale on Thursday next, at Andrew's Hotel, Redruth.—Mines and Parcells.—Par Consols, 312; Wheal Virgin, 328; Wheal Friendship, &c., 319; Fowey Consols, 309; Lewann, 174; Tregollan Consols, 163; Bazeley's Ore, 162; Providence Mines, 81; Wheal Curtis, 79; Wheal Providence, 64; Great Wheal, 62; Wheal Messer, 24; Wheal Sparrow, 13.—Total, 2203 tons.

SALE OF BLACK TIN.

By Ticket, on the 19th of November, at Penzance.

Mines.	Tons.	Price.	Amount.	Purchasers.
St. Ives Consols	30	£41 17 6.	£1256 5 0	Williams and Co.
Boscawell Downs	20	44 17 6.	897 19 0	Bolthos and Co.
ditto	7	40 5 0	281 15 0	L. C. & W. Danub
Wheal Reeth	42	43 0 0.	182 15 0	Williams and Co.
ditto	44	43 0 0.	182 15 0	Bolthos and Co.
ditto	2	38 10 0	76 0 0	ditto.
ditto	3	38 10 0	38 10 0	L. C. & W. Danub
ditto	3	43 0 0.	129 0 0	Williams and Co.
Total tons, 71½.		Total amount, £3048	5 0	

SALE OF COPPER ORES AT SWANSEA.

Copper ores for sale Dec. 1.—Santiago 80, ditto 76, ditto 74, ditto 72, ditto 66—Cobre 133, ditto 86, ditto 80, ditto 67—Chili 78, ditto 70, ditto 64, ditto 56, ditto 70—Allihies 110—Knockmahon 86—Lackamore 75—Sygum 28, ditto 21—Phoenix 27, ditto 20—Laxey 46—Chili 25—Llwyndy 17.—Total, 1337 tons.

PRICES OF MATERIALS IN CORNWALL.

AS SUPPLIED AT THE PRINCIPAL MINES IN THE FOLLOWING MONTHS.

SUPPLIED AT THE PRINCIPAL MARKETS IN THE FOLLOWING MONTHS.									
	5 & 6	7 & 8		5 & 6	7 & 8				
Common iron, per cwt.	8s 1d	7s 9d	Iron-wire sieves, each	2s 3d	2s 3d				
Half-inch square ditto	9 1	8 9	Iron-wire work, per foot	1 6	1 6				
Best tough whin chain	28 0	28 0	Board nails, per cwt.	17 0	17 0				
Boiler plates	12 6	12 0	Half-bush ditto, per 1000	0 5	0 5				
Hoop iron	11 6	11 6	Hatch ditto	3 8	3 8				
Nail rods	9 9	9 9	Half-hatch ditto	3 0	3 0				
Miners' shovels	30 0	30 0	Linseed oil, per gallon	2 6	2 9				
Charcoal iron	13 6	14 0	Rape ditto	3 10	3 10				
Gunpowder, per 100 lbs.	40 0	40 0	Birch, per foot	1 8	1 7				
Leather, per lb.	1 10	1 10	Pine	1 6	1 6				
Coals, per ton, at quay	11 6	11 6	Sheet lead, per cwt.	21 6	24 0				
Candles, per dozen lbs.	5 5	5 4	Barrow bends	11 6	11 6				
Tallow, per cwt.	48 0	48 0	H 2 steel (112 lbs.)	30 0	30 0				
Ropes	36 0	36 0	2s. nails	16 10	16 10				
Flat ropes	48 0	46 0	Pick hills ditto	1 5	1 5				
Hemp	0 44	0 44	Shovel hills	2 0	2 2				
White yarn, per cwt.	37 0	34 0	White ground lead	22 0	22 0				
White rope	33 0	33 0	Red lead	26 0	26 0				
Brass-wire sieves, each	3 8	3 8	Best rolled iron	11 6	11 6				
Ditto machine	13 0	13 0	Blistered steel	40 9	40 0				